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31 Times Around the Earth . .

In 1938, there was only one crossing fatality on American Railroads for each 776,261 locomotive miles traveled (equivalent to 31 times around the earth), as disclosed at the A. A. R. Safety Section meeting in Cincinnati. Only 4.7 per cent of all highway motor vehicle fatalities occurred at railroad crossings. In the State of Ohio, for example, according to the Superintendent of the Ohio State Highway Patrol, grade crossing fatalities have been reduced 74 per cent in the last four years, mostly because of the improvement in warning devices.

Still greater improvement can be made by protecting more crossings with modern warning devices. The flashing light signal is one of the most effective means of preventing accidents, next to highway-railway grade separation. "Union" Highway Crossing protective devices meet the specifications of all interested agencies.

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RAILWAY AGE

Another Defeat for Railway Management

The failure of Congress to pass a new transportation act added another to the many defeats of the management of the railway industry. Sharing in this defeat were the railway labor unions, which are not so used to being beaten. Of much more importance, it was a defeat for private enterprise. Bills were passed by both houses of Congress; but they were so different it was impossible to amalgamate them during the few remaining days of the session. It is assumed a joint conference committee will harmonize them into a single bill. But even if all the worst parts of the two were eliminated and all their best parts enacted the new transportation act would be only a start toward solution of the railroad problem; and it is not yet certain that this start will be made during the next session.

The railroads present one of the nation's gravest and most important problems. Action on no other problem at the recent session of Congress was so imperatively demanded by the public interest. No other subject excepting perhaps prohibition has received so much discussion. It is, therefore, a striking illustration of why the longest and worst depression in history still continues almost unabated that Congress was in session eight months; broke all records with appropriations of 13 billion dollars; considered and legislated upon many matters of small importance; and then adjourned without doing a thing about the great railroad problem which exists largely because of unsound and unfair government policies.

Too Little Work on the Industry's Problems

We have said this was another defeat for the management of the railway *industry;* and we believe this point should be strongly emphasized. The *management of the industry* consists of the chief executives of all the roads composing the Association of American Railroads. The problems of the industry for years have been becoming, and have now very decisively become, the principal problems of almost every individual railroad. Therefore, either (1) a very large part of the time and energies of the chief executives of all the individual railroads should have been devoted within recent years to the problems of the industry, or (2) they should have delegated full authority to a few men of ability to speak and act regarding these problems. But neither of these things has been done. It was supposed the latter was being done when the Association of American Railroads was created almost five years ago in September, 1934, and large powers were given to its executive committee; but it never actually has been done; and the industry has since suffered one serious defeat after another and it, and consequently all individual roads, have retrogressed rather than progressed.

There have been made meantime, it is true, some important forms of progress, such as the development of air conditioning and streamlined trains, increases in the speed of trains, and so on. But most of the industry was actually or virtually bankrupt five years ago. Its net earnings in the first half of 1934 were only 47 per cent as large as they averaged in the first halves of the five years 1925-1929 inclusive. Consequently, a large increase of its net earnings was absolutely essential to renewal of its progress all along the line and to its ultimate preservation as a private enterprise. And it has not had any such increase of net earnings—as is but too conclusively shown by the statistics for the first halves of 1934, 1936 and 1939 given in the accompanying table.

Comparing 1934, 1936 and 1939

In the first half of 1934 net earnings were helped by the fact that the deduction of 10 per cent from basic wages made in 1932 was still in effect; and in the second half of the year the Association of American Railroads was created with the declared purpose, among others, of co-operating "more effectively with the government in constructively working out a program in the interest of the owners of the railroad properties, their employees and the public." In the first half of 1936 the pre-depression basis of wages had been restored; but traffic, and consequently net earnings, were the largest since the first half of 1931. Finally, in the first half of 1939, railway net earnings showed the com-

bined effects of the wage advances management agreed in 1937 to make and in 1938 to maintain; of the government policies discriminating against the railways in favor of other carriers which certain branches of Big Business promote and railway management has tried ineffectually to get changed; and of the New Deal "recession" that began in 1937. Consequently the statistics in the accompanying table giving railway results in the first halves of 1934, 1936 and 1939 are instructive and significant.

Railway Results, First Halves of 1934, 1936 and 1939

	1934	1936	1939
Oper. revenues	$1,629,308,143	$1,872,580,143	$1,804,126,557
Oper. exp. and rentals	$1,275,689,361	$1,485,687,866	$1,466,394,058
Taxes	$ 126,751,756	$ 148,875,849	$ 172,469,982
Net ry. oper. inc.	$ 226,867,026	$ 238,016,428	$ 165,262,517
Employees	1,009,481	1,038,496	953,660
Wages	$ 748,109,640	$ 896,195,588	$ 894,498,793*
Total hours worked	1,192,210,421	1,294,099,802	1,192,571,840*

* June estimated.

1934 to 1939—Net Earnings Decline 27 Per Cent

Compare, first, the figures for the first halves of 1934 and 1939. Gross earnings increased almost 11 per cent, or 175 million dollars. That certainly should have done the railways and their owners some good. But it did not, for operating expenses and rentals increased 15 per cent, or 191 million dollars, and taxes increased 36 per cent, or 46 million dollars. The big increase in operating expenses was principally due to a total advance in the average hourly wage of almost 20 per cent, or from 62.7 to 75 cents caused by, first, restoration of the 10 per cent deduction from basic pay begun in 1932, and, second, general advances in wages granted in 1937. The aggregate hours worked by employees was virtually the same; but, because of the advance in the average hourly wage, the same amount of work cost the railways 146 million dollars more in the first half of 1939 than in the first half of 1934. Because of the large increases in operating expenses and taxes there was—despite the relatively large increase in gross earnings—a decline of 27 per cent or 62 million dollars in net earnings in the first half of 1939 as compared with the first half of 1934.

Let us now compare the figures for the first halves of 1936 and 1939. Because of the "recession" gross earnings were down 3.7 per cent, or 68 million dollars. But operating expenses and rentals were reduced only 1.3 per cent, or 19 million dollars; while taxes increased almost 16 per cent, or 24 million dollars. Consequently net earnings showed a decline of almost 31 per cent, or 73 million dollars. The statistics regarding employees, their compensation and the number of hours they worked show why operating expenses declined relatively so much less than gross earnings. The number of employees and also the total hours they worked were reduced about 8 per cent. But the economy thus effected was almost completely offset by the advances in wages granted in 1937, which raised the average hourly wage about 8 per cent, or from 69.3 cents in 1936 to 75 cents in 1939.

Net Earnings the Test of Success

Obviously these statistics of the railway industry for the first halves of 1934, 1936 and 1939 do not reflect any credit on the management of the industry. No business was ever established for any purpose excepting to get net earnings satisfactory to those investing in it. The means adopted for this purpose should be fair to all affected by them; but if the net earnings secured are not satisfactory, or are entirely unsatisfactory, to investors then the means used for getting them are a failure, and the management using these means has made a failure. The test of whether net earnings are satisfactory is whether investors will voluntarily leave and increase their investment in the enterprise. Current railway net earnings cannot stand this test. The fact that the average prices of both railway bonds and stocks are lower now than in 1934 shows that meantime investors have become increasingly dissatisfied with net earnings and increasingly anxious to get their capital out of the industry.

Railway management plainly has failed to accomplish the purpose it declared five years ago of co-operating "more effectively with the government in constructively working out a program in the interest of the owners of the railroad properties, their employees and the public." Those still employed (excluding officers) are getting much higher wages than then; but they are the only persons who have benefited by the policies since followed. The 56,000 employees who have lost their jobs have not benefited. The properties have not benefited, because, while much more is being paid for it, there is no more work being done on them than in 1934. The owners have not benefited, because 27 per cent less net earnings are being made. And the public has not benefited, because the decline of net earnings has reduced proportionately the industry's ability to improve, or even maintain, its service.

Radical Changes Plainly Needed

Can this five years' failure be turned into success? If so, it can be done only by radical changes in methods and policies. And the first and most essential change must be in the attitude of the chief executives of the individual railroads toward the problems of the industry—an attitude best indicated by the perfectly trifling amount of time they give to conferences and discussions regarding them. These problems of the industry are the really great and vital problems of every individual railroad; but the chief executives of the individual railroads will neither give them the attention essential to promoting their solution nor give anybody else the time and authority necessary for adequately dealing with them. No industry ever had an abler representative regarding

legislative matters in Washington than Judge Fletcher; but Judge Fletcher is constantly handicapped by the hurried, ill-considered and often inconsistent decisions and the divided counsels of his numerous bosses. The railroads have experts competent to deal with every problem of the industry; but the industry as an industry deals efficiently with hardly anything, and consequently marches from one defeat to another.

"A Great Industry Lacking in Influence"

A member of the U. S. Senate who worked hard for legislation helpful to the railways during the last session of Congress said in a recent letter to the editor of this paper: "I have found railway labor fairly influential, particularly on the Senate side. I have never seen a great industry so lacking in influence in either House of Congress as is railroad management. This is a tragedy, but it is largely due to their lack of initiative and foresight, and perhaps to some extent lack of courage in grasping nettles with which they must deal sooner or later. I wish that was not the case, but mournfully I must say it is. * * * I would like to tell those birds in what low esteem I hold their intelligence and initiative."

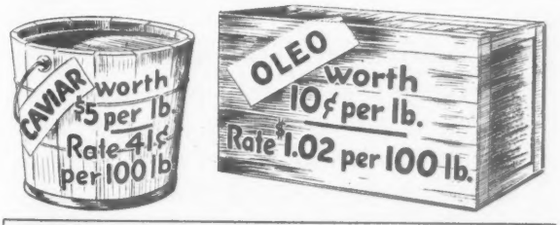
What is the answer? The answer is for the chief executives of the railways to resolve mightily to solve the problems of their industry; to subordinate their jealousies and rivalries to this purpose; to devote to these problems time, discussion and consideration proportionate to their importance; and, in dealing with every one of them, to get and carefully weigh the advice

What Will the Traffic Bear?—26

We have all seen the decay of the old-fashioned country store—with its shelves so cluttered up with merchandise for which there is no call that the proprietor can't locate the goods the customers really want.

But just try to take some of the old junk off the storekeeper's hands—and, likely enough, he will insist on his original cost-plus-profit price. So you go away and leave him in the solitude of his collection, and other customers do the same.

There is some excuse for a business going to seed like this when it is owned by an individual who



The Classification does not conform even to the out-worn theory on which it is based.

can't help growing old—but why should a corporation, which (theoretically) has an understudy treading on the heels of the holder of every important job, suffer from a similar complaint? And here is the test to determine whether a price-making organization is alert or decadent: Does it recognize in its pricing that **the maximum value of a commodity or service, regardless of its original cost of production, is no greater than the price at which a suitable substitute can be had?** Unless the price-makers recognize this principle, they will make two fatal errors: (1) They will fail to collect all they could collect by making some prices unnecessarily low and (2) they will attempt to collect more than can be collected in other cases—thus donating business to competitors. When either error is made, the price-makers lose revenue for their employers.

Bearing in mind these principles, let's have another look at the Consolidated Freight Classification. For example, foodstuffs handled in volume by distributors and retailers, weighing 20 lb. or more per cu. ft. and loading to normal truck capacity, pay anywhere from 41 cents to $1.20 per 100 lb. for a 200-mile haul, depending upon the name and use of the commodity and the territory in which it is shipped. A case of caviar at $5 per lb. pays 41 cents while a 10-cents-per-pound case of oleomargarine pays $1.02. Caviar at $5 is rated with 3-cent tomatoes while 10-cent oleo is rated with 30-cent butter. Where are the "what-the-traffic-will-bear" and "value-of-the-service" theories in such rates as these?

This system of pricing has enabled the railroads' competitors to develop a billion-dollar annual business largely at the railroads' expense. Some of this business has gone forever—but a large part of it can be regained. All that is lacking is the **will** to go out and get it back, and to take the necessary steps to that end. Vice-President Saunders of the Southern Pacific in a recent address before the Associated Traffic Clubs at San Francisco cited the only practical course for the railroads when he said:

> We must carry out the principle of the will to win —as exemplified in the orders which Marshal Foch gave his division commanders on the eve of the battle of the Marne: "You say you cannot hold your present position. You say you cannot retreat. There remains to you but one course—attack at once."

The railroads **must** attack—and the logical place to begin the offensive is with the Consolidated Freight Classification. It is chock-full of monstrosities such as those cited—and is the principal contributor to the picture which comes into the minds of many people when they think of the railroads, namely, that of the old-fashioned general store—fully stocked with out-of-date goods and innocent of anything new.

of their subordinates who have the most expert knowledge regarding them.

Certainly the management of an industry which in 1934 reorganized itself with the objectives then stated for the Association of American Railroads, and which five years later is making *11 per cent more gross earnings* and *27 per cent less net earnings,* has little reason for congratulating itself on what it has accomplished for those whose investment made the industry possible.

The Future of Shippers' Regional Boards

When the Shippers' Regional Advisory Boards were organized originally, the purpose in mind was to develop co-operation between the railways and the shippers in eliminating the car shortages which were then recurrent. In the sixteen years since these thirteen boards were formed the railway picture has undergone a great change. Instead of a scarcity of transportation, the condition that is creating the most concern among the railways today is a scarcity of traffic.

Even so, the original function of the regional advisory boards remains important. The annual grain rush supplies a case in point. When, some years ago, combines came into general use in the wheat territory the entire system of wheat loading was changed. Instead of grain coming to the railways gradually over a period of months after the harvest, as under the older thresher method of harvesting, large quantities of wheat are now dumped upon them immediately and they are faced with the problem of handling much of the crop within a few weeks. Only complete co-operation between the railways, the regional advisory boards and the Car Service division of the A. A. R. enabled this revolutionary change in operation to be met without serious congestion and delay, and only a continuance of the co-operation makes it possible to get this concentrated traffic to market every year.

Thus, even in these days when there is a general surplus of transportation, the original function of the boards remains a highly important one in the wheat growing areas which, considering both the spring and winter wheat territories, comprise a vast area of this country. Similar constructive co-operation prevails in agricultural districts from which perishables are handled.

Not only does the original function of the boards remain important but their scope has been broadened far beyond the mere prevention of car shortages to embrace a wide diversity of other problems common to the railways and their patrons. The boards have served as a common ground where industrial traffic managers and operating officers become acquainted with the problems of each other. The operating men have profited greatly by this contact with their shippers, while industrial traffic managers have gained a new insight into the practical problems involved in meeting their transportation needs.

There are many other transportation problems affecting both the shippers and the railways that may well receive airing in these meetings, which should provide a forum at which problems of mutual interest can be solved in a friendly fashion. Railways too often find traffic being diverted to other agencies because of minor deficiencies in service that could be corrected if brought to light. Such difficulties can well be discussed at advisory board meetings and remedial measures adopted. It should be the function of these boards to see that no misunderstanding of any sort exists between the shippers and the railways with regard to service.

It may be mentioned in this connection that some of the chairmen of the regional advisory boards report difficulty in maintaining attendance. This strikes at the very heart of the work of these boards, for certainly in these days when good transportation service is so vital to the success of industries and when these industries are diverting so much of their traffic to other agencies, there should be sufficient topics for discussion to enable programs to be developed that will be of intense interest to the railways and to their patrons.

In some areas difficulty is also reported in procuring good railway speakers to address the meetings. Certainly the least the railways can do is to co-operate in the development of these programs by bringing before their meetings speakers with a real message. The possibilities of benefit to the railways from the boards is so great as to warrant the whole-hearted co-operation of the railways.

The Selfish Interest of Business in Private Ownership of Railways

We must expect to find a government which is eager to compete with private enterprise at least as eager to prevent the competition of private enterprise with it. And when—or if—such a government establishes itself as transport monopolist, the argument for government manufacture of transport equipment and production of fuel will have taken on a new persuasiveness. Already our government presumes to control wages and working hours on government contracts; the scope of these would be enormously widened if the railroads alone passed into its hands. It would be too trustfully optimistic to suppose that bureaucratic rule would or could stop there.

So, whether railroad owners and creditors merit better or worse treatment than they are receiving is not really the larger railroad issue. That issue is: (1) whether the railroads can survive as a form of private enterprise and (2) if they do not, how many of the other forms of free individual initiative can continue to live as such. It is an issue which plainly enough concerns "little business" as much as big.

From an Editorial in the Wall Street Journal.

Operating Lessons from Train Accidents*

Analysis of Interstate Commerce Commission reports made by a committee of superintendents

AN analysis of the reportable train accidents for the year 1937, the latest date for which figures are available reveals the following:

Improper handling and disobedience of train orders, 16. Although the number of accidents resulting from this cause is comparatively low, they were responsible for 6 deaths and 37 injuries, relatively a high percentage of the total.

Improper display and disregard of fixed signals, 137. This figure includes 68 cases of overrunning stop signals in which one person was killed and 122 injured.

Negligence in giving and complying with hand signals, 204, about 25 per cent of the total being attributed to misunderstanding of signals.

Improper flagging and disregard of flag, torpedoes, etc., 35. This figure includes 13 total failures to flag, resulting in 9 deaths and 28 injuries, which indicates the serious nature of this particular dereliction.

Improper handling of air brakes, 43.

Negligence in connection with hand brakes, 421; 322 resulting from failure to secure and 95 from failure to control equipment by hand brakes.

Negligence in connection with the operation of switches, 547; 232 resulting from switches set in wrong position, 128 from running through switches and 69 running off derails.

Other forms of neligence, 1,296, including the following cases: 154—excessive speed or failure to run with proper caution in yard limits or in permissive block; 91—fouling switches; 149—failure of maintenance or other employees to protect when obstructing track and disregard of such protection; 11—low water in locomotive boiler, this form of negligence being the primary cause for boiler exposions in which the fatalities are very high, as evidenced by the fact that these 11 accidents resulted in 7 deaths and 2 injuries; 115—absence of man in front of leading car being pushed; 79—improper handling of cars or locomotives in switching or coupling; 98—failure to observe cars or locomotives on adjacent track not clearing; 50—negligence of hostlers and helpers, etc., in moving locomotives; 143—failure to keep proper lookout.

Defects In or Failures of Equipment

Defects in or failure of locomotive boilers or appurtenances, 8.

Defects in or failures of other parts and appurtenances of locomotives and tenders, 478; 135 of which were in crank pins, collars, etc., and 132 in main and side rods.

Defects in or failures of trucks, 777; 268 of which were in arch bars, bolts, etc., and 162 in truck frames. These two items constituted over 50 per cent of the truck failures.

What Causes Accidents?

An analysis indicates that negligence accounts for a large percentage of accidents. Negligence is largely attributable to lax supervision and operating officers can do much toward eliminating accidents by giving the matter detailed study and checking on supervision.

Defects in or failures of wheels and axles, 1,032, this figure including 144 cases of cast iron wheels broken due to overheating or other causes; 138 wheel flanges broken, worn, cracked, etc.; 101 wheel tires loose, broken or cracked; 77 loose wheels; 136 broken axles; 193 journals broken due to overheating, and 139 due to other defects. Of the grand total of 3,120 defects in or failures of equipment, over 1,800 occurred in trucks, wheels and axles.

Defects in or failures of power brakes and appurtenances, 59, 23 of which were the result of air hose breaking or bursting.

Defects in or failure of hand brakes, brake rigging and appurtenances, 221; 73 of which resulted from brake beams broken, disconnected, displaced, etc.

Defects in or failure of couplers, 152; 28 resulting from low couplers and 42 from coupler shanks broken.

Defects in or failures of draft rigging, 202, of which 74 resulted from coupler or draft key failures or defects.

Defects in or failures of car bodies and other parts of equipment, 191. Seventy-seven of these resulted from weak, broken or otherwise defective sills and 64 from other parts being weak or defective.

Defects In or Improper M. of W. or Structures

Defects in or improper maintenance of bridges, trestles, culverts and tunnels, 5.

Defects in or improper maintenance of ties and tie plates, 47; 27 resulting from decayed or worn ties, and 18 from ties which were soft or of poor quality timber.

Defects in or improper maintenance of rails and joints, 378, including 288 broken rails, as well as 64 cases of rails spreading for various causes.

Defects in or improper maintenance of frogs and switches, 190.

Defects in or improper maintenance of interlocking and block signal systems, 3.

Miscellaneous Causes

Miscellaneous causes, 442; 128 of which involved excessive and uneven super-elevation of track and 171 improper alinement and surface of track.

Improper loading, 153; 41 of which resulted from un-

* From a report presented before the recent convention of the American Association of Railroad Superintendents, by a committee of which E. C. Gegenheimer, superintendent, Pennsylvania, Altoona, Pa., was chairman.

equal distribution of load and 97 from load shifting or falling on track.

Negligence of non-employees, 35; 25 of which resulted from failure to control cars on siding.

Malicious acts or other misbehavior of non-employees, 84, involving 14 cases of obstruction placed on track and 43 switches tampered with.

Other ascertained causes, 1,022; 61 of which resulted from landslides, boulders, etc.; 74 from snow or ice on tracks, and 36 from obstructions caused by other train accidents. In this grouping were also included 165 cases of passenger automobiles, motor buses and motor trucks struck by trains, and 73 cases of such vehicles running into the side of trains. Accidents of this nature are the most prolific cause for fatalities, as evidenced by the fact that in these 238 accidents 144 people were killed, as compared with a total of 310 in all reportable train accidents. The total number of people killed during the year 1937 in accidents caused by trains striking motor vehicles or motor vehicles running into the sides of trains, including those which were not classified as reportable train accidents, due to the fact that damage to railroad property did not exceed the sum of $150, was 1,607.

Unascertained causes, 234.

Other Accident Statistics

The most recent annual summary compiled by the Bureau of Safety shows that during the year ended June 30, 1938, it investigated 45 collisions and 50 derailments in which 184 persons were killed and 1,045 injured. Of the 95 accidents investigated by the Bureau of Safety, 49, or over 50 per cent, were attributed to negligence of employees; 6 to defects in or failure of equipment; 7 to defects in or improper maintenance of way and structures; 32 to miscellaneous causes, among which were 10 highway grade crossing accidents and 6 cases of trains striking rocks and landslides on tracks, and 1, cause undetermined. Thirty-four of the 49 accidents ascribed to negligence of employees were due to disregard of signals, failure to operate trains under control in yard limits, on sidings, etc., and failure to provide proper protection to avoid collision.

Negligence of Employees

The report of the Bureau of Locomotive Inspection for the year ended June 30, 1938, shows that it investigated 208 accidents and casualties resulting from failures of steam locomotives and tenders and their appurtenances, as well as 4 accidents and casualties resulting from failure of locomotives other than steam and appurtenances, involving 7 persons killed and 216 injured. Although a large number of these cases were not classified as reportable train accidents, due to damage to equipment or other railway property not exceeding $150, it is interesting to note that five of the total of seven deaths resulted from crown sheet failures due to low water which is properly classified under negligence of employees.

The preceding figures show that 2,699, or 32 per cent, of all reportable train accidents in 1937 were listed under the general heading of negligence of employees. However, further analysis discloses that negligence played a much greater part in the total number of train accidents than these figures would indicate. For instance, under defects in or failures of equipment, a large number of accidents are listed under such items as excessive or insufficient side bearing clearance, high and low couplers, worn wheel flanges and brake shoes, etc., which should have been found by inspectors. Failure to discover old defects visible to ordinary inspection also resulted in many of the accidents which are charged to broken parts. Another common cause for train accidents listed under this general heading is broken journals due to overheating, which in practically all cases are caused by lack of or improper oiling attention. Further, in cases of journals and wheels broken due to overheating, the responsibility rests upon train and engine crews to watch for conditions of this kind, not only on their own but on passing trains, which is not always lived up to.

Nearly all accidents included under defects in or maintenance of way and structures, with the exception of those chargeable to broken parts, resulted from such conditions as decayed and worn ties, spread rails, worn frog and switch points, insufficient or excessive superelevation of track, improper alinement or surface of track, etc., which can readily be discovered by the most casual inspection.

The fact that employees do not have a monopoly on negligence or carelessness is evidenced by the large number of accidents under the general heading of miscellaneous causes resulting from improper loading of cars, failure of non-employees to control cars on sidings, and negligence on the part of drivers of motor vehicles at grade crossings.

The foregoing analysis indicates that concentration on raising the standard of efficiency of the human element would pay big dividends from the standpoint of accident prevention. To do this certain activities outlined below, which may or may not be in existence in part or in whole on various railroads, suggest themselves, especially in connection with employees engaged in work where a man failure is liable to be the direct or indirect cause of a train accident.

Physical Examinations

Rigid physical examinations, including sight and hearing, as well as color sense where necessary, by competent medical examiners at the time of entering the service, after prolonged absence from active service, and periodically while in active service. A further check to see that employee's physical condition is not impaired at the time he reports for each day's work by lack of rest, indulgence in intoxicants, etc.

Each employee should be fully instructed in the duties of his position, as well as in rules, regulations, etc., with which the operation demands that he be familiar. Progressive examinations should be given until he has fully qualified, with re-examinations at stated intervals. Care must be exercised that whoever is assigned to examine employees knows his subject thoroughly and is not inclined to pass any one unless satisfied that he has the necessary knowledge.

Disciplinary Action

A proper disciplinary system is essential. It is generally conceded that in order to obtain maximum benefit from the application of discipline, the supervisory officer should have no thought of punishment in mind, but should apply discipline in a manner calculated to impress upon the employee the necessity for refraining from future derelictions. In order to obtain this reaction, the individual must be convinced that he was at fault and there is no better way to do this than by a thorough and impartial investigation to fix definitely the responsibility for the failure. To be effective, discipline must be made progressively more severe, where the same offense is repeated at short intervals, to discourage indifference on the

part of the employee. On the other hand, good records should be given consideration in fixing the measure of discipline, as this places a premium on employees keeping out of trouble.

Proper Supervision

Unless supervisory officer from the highest to the lowest, in the operating, maintenance of way and mechanical departments are thoroughly sold on safety and are continually on the alert to discover and correct violations of the rules, carelessness and unsafe conditions and practices, no appreciable progress will be made toward safer operation, regardless of various schemes which might be placed in effect. In addition to impressing the supervisory officers continually with their responsibility in this respect, it has been found that the inauguration of a standard system of efficiency checks to be made by supervisory officers whenever the opportunity presents itself, with the requirement that they report the results thereof, is a distinct aid in keeping not only the supervision but also other employees on the alert. By going over these reports those higher up also get an opportunity to see what interest is being displayed by the individual supervisor in the safety of operation. To simplify reporting, various checks included in the program can be numbered. Some of the checks which might be made are outlined below:

Enginemen's performance when other than clear signals are displayed, fusees or torpedoes placed on track, while running in territory where speed is restricted, and under conditions where whistle signals are required or headlights dimmed.

Action taken by flagman when flag protection is necessary.

Conductors and enginemen comparing time with standard clocks and with each other.

Signal appliances in good order and ready for immediate use.

Night signals displayed from sunset to sunrise and during the day when day signals cannot be plainly seen.

Proper use and display of signals.

Enginemen, firemen and trainmen calling indications of fixed signals.

Enginemen showing train orders to firemen and when practicable to forward trainmen.

Conductors showing train orders when practicable to trainmen.

Whether a trainman is placed on the leading car when pushed by engine.

Whether switches are left in proper position.

Whether proper train inspection is made to see that car doors are secured and drop bottoms, etc., are in place and secured by the fasteners provided.

Handling of general orders.

Whether road and terminal air brake tests are made as prescribed by rules.

Observing locomotive, passenger and freight equipment after inspection.

Track foreman providing necessary protection.

Performance of crossing watchmen and gatemen.

Conformity to regulations as to explosives and inflammables.

Obedience to special instructions governing the construction and maintenance of signals and interlocking plants.

Another important function of supervision is the thorough investigation of all accidents, regardless of the amount of damage, to determine the exact cause, as without this information proper corrective action cannot be taken. Also, where accidents from the same cause and in the same territory recur frequently, it has been found that keeping a detailed record of the circumstances surrounding such accidents and careful study eventually suggest a remedy to cure the situation.

The reports made by the Bureau of Safety, Interstate Commerce Commission, covering accidents resulting in serious injury or death which they investigate are very comprehensive and should be read by the supervisory officers for their educational value. The frank criticism of unsafe practices, laxity of enforcement of rules, etc., contained in these reports is bound to impress supervisors, who read them, with their responsibilities.

A great amount of stress has been placed on the subject of negligence because it is felt that the best opportunity for reducing the number of train accidents lies in this field; at the same time, we do not want to overlook or minimize the improvements or changes in equipment which have already been made or are being made as the result of lessons learned from failures due to this cause.

Correcting Causes

Accidents reported under defects in or failures to locomotives and their appurtenances are being minimized by redesigning of crank pins, collars, crossheads and guides, cylinder heads and steam chests, pistons and piston rods; by the use of stronger material, and by using a better grade of steel and heat treatment thereof in the case of crank pins. It has also been found in connection with valve gear, eccentric and rod failures, that lubrication plays a most important part, and that the change from oil to grease lubrication which is now rapidly taking place is showing remarkable results.

The present program, which is nearing completion, of replacing arch bar trucks with cast steel side frame trucks is having a marked effect in reducing accidents due to truck failures.

Cast iron wheels are being replaced with steel wheels and magnetic testing of axles has been instituted, which two items should be of material assistance in reducing failures of wheels and axles.

AB brakes which are now being applied are a great improvement over the power brakes previously in existence.

Brake rigging failures are being lessened by changes in brake beam hangers and underconnector supports, and the use of stronger brake beams.

Coupler and draft rigging failures are also being lessened by the application of type E couplers with 11-in. knuckles and new style lifts and heavy duty draft gears with larger coupler shanks, eliminating slack action and variation in heights of couplers.

Weaknesses in car bodies are being remedied by the use of stronger sills, etc.

Broken rails, which in the past have been a frequent cause of train accidents, are being greatly reduced by the operation of detector cars on a large portion of the nation's main tracks.

The perfecting of the normalizing process for rails has and will continue to insure a better grade of rail material that will be comparatively free from defects. It is claimed that "normalized rails" have a refined grain structure, low internal stresses, a high degree of ductility combined with satisfactory hardness, great resistance to impact and hardened ends. These characteristics should insure freedom from most of the weaknesses such as broken bases, square breaks, transverse fissures, etc., found in rails now in service, especially at low temperatures.

Rails removed from high speed main tracks rolled from the same heat as other rails which have been found

(*Continued on page 251*)

Motives Controlling the Purchase of Rolling Stock*

Intangible factors make solutions difficult—Case study illustrates several plans for acquiring freight cars

By L. K. Sillcox

First Vice-President, New York Air Brake Company

TWENTY-FIVE to thirty-five years has been considered a reasonable estimate of prospective life for railway freight and passenger cars. Locomotives have been judged to be as durable. Competition in type of transportation has introduced the factor of obsolescence, which heretofore has been an element of little importance to railways. Wooden cars were rendered obsolete by steel equipment but the wooden cars were allowed a period of years in which to run out the balance of their useful lives. Competition existed only between railways and they shared a common problem, dealing with it realistically and rationally.

Relatively, the life of a motor coach or automobile is measured in months, of an airplane, in hours. They have demonstrated to the railways the opportunities for frequent renewal obtained through intensive utilization. Building cheaply for short life, however, cannot be carried to the ultimate extent in all industries and two factors in particular bear heavily upon the railroads. First, the method of operation, coupling one car behind another, calls for great strength of structure and consequent durability in order that all may interact without damage. Second, seasonal and territorial peaks compel the maintenance of great surpluses of equipment with the necessary interchange of old and new forms, requiring a period of many years to produce retiring mileages. In the matter of seasonal peaks, the burden has always fallen upon the railways as the mass carriers for the nation. Doubtless, it always will be so.

Adequacy of Equipment Inventory

This is an appropriate time for taking stock of the railway equipment inventory, judging its adequacy with respect to present and prospective demands of traffic, and evaluating the individual methods of equipment acquirement from the standpoint of net cost. The financial press reports with alarm in almost every issue the dwindling reserves of railway equipment. The fear of tonnage bogged down at its source for lack of transportation capacity has been voiced throughout the last four years, yet the nation has experienced no serious car shortages within that space of time, even though carloadings briefly have improved to some extent in the interim. The only shortages witnessed have been local, temporary, and but a single car type has been involved in each region. Why, then, all this concern about the plant which railways are supporting for the benefit of national commerce?

The answer to the question of railway equipment adequacy is found in the following facts; comparing 1937 with 1917: (1) Railways are supporting 28 per cent fewer locomotives. (2) The capacity of each has increased 45 per cent. (3) A 32 per cent increase in revenue tons per freight train is reported. (4) This increased train tonnage is obtained by an increase of 50 per cent in the number of cars per train. (5) Each active locomotive produces 18 per cent more mileage each day. (6) The period witnessed a reduction of 24 per cent in the number of passenger-train cars on Class I railways. (7) There was a 53 per cent reduction in number of revenue passengers carried. (8) There were 38 per cent fewer revenue passenger miles of transportation sold. (9) A reduction of 24 per cent in the total number of freight cars is observed. (10) Car inventory reduction is offset by a 25 per cent reduction in the number of tons of revenue freight originated.

Freight-car net capacity has been augmented by (1) an increase of 18 per cent in capacity of the average car, (2) an increase of 35 per cent in the miles of service derived per car day, and (3) an increase of 56 per cent in the average speed of freight trains.

From any studied review of current statistics and examination of railway capacity to meet unusual demand, there appears to be no visible evidence of the need so often expressed for railways to augment their plant. Probably railways need no more cars or locomotives. They do need better and more modern ones in many cases.

A return of 38 per cent is claimed as the result of installing a series of modern 4-8-4 locomotives to replace a large number of the 4-6-2 and 2-8-2 types in freight service on one eastern road. More recently, the installation of 20 strictly modern locomotives of 4-8-4 wheel arrangement, adapted to either heavy passenger or fast-freight service, replaced a larger number of 4-8-2 type, with a reported annual return of more than 50 per cent on the investment. Two rail motor cars, air-conditioned and otherwise improved, increased traffic handled one-third and reduced operating expenses, including depreciation, nearly one-half, when substituted for steam service on a mid-western run of 350 miles. Diesels can replace steam switching locomotives with profit in many terminal areas.

Reasons Which Lead to Purchase of New Cars and Locomotives

Nevertheless, it is seldom so easy a matter definitely to assign economies. Many times the effect of intangibles outweighs in significance the benefits which may be definitely assigned.

New motive power may be purchased because (1) more aggregate motive power capacity may be required;

* Part of an address presented before the Graduate School of Business Administration, Harvard University, May 4, 1939.

(2) it may operate more efficiently; (3) it may reduce maintenance expense; (4) it may provide economy in crew wages; (5) it may be run at higher speeds; (6) it may haul heavier trains; (7) it may relieve rough handling; and (8) it may be important from the standpoint of public relations.

New passenger-train cars may be purchased because (1) they may be needed to handle traffic; (2) lower maintenance costs are expected; (3) riding qualities of existing equipment may be unsatisfactory at speeds demanded; (4) existing equipment may be uneconomical for high speeds; (5) greater capacity per train may be needed; (6) existing equipment may not lend itself to modernization, and (7) competition may compel complete modernization.

New freight cars may be purchased because (1) traffic may demand more cars of a specific type; (2) existing cars may offer insufficient strength for modern hauling methods involving long trains; (3) it may reduce maintenance expense; (4) it may be uneconomical to adapt existing cars to the newer requirements of interchange; (5) changes to adapt to modern top freight-train speeds may involve incommensurate expense, and (6) new and improved materials of construction, for which economic value is claimed, are available.

In each of the three cases cited, the first item affecting decision is independent of any economic urge. If traffic regularly requires an augmented inventory of any equipment type, economic justification for purchase need not be sought. Beyond these same first items, factors may be designated as tangible or intangible. For instance items 2, 3 and 4, under locomotives, are definitely determinable analytically. Items 5 and 6 are only partially subject to evaluation, whereas advantages accruing under items 7 and 8 are definitely intangible.

In the case of passenger-train-car purchases, only probable savings in maintenance expense, item 2, may be estimated with confidence. Factors under items 3, 4 and 7 are subject to no strictly economic appraisal. Partial costs may be assigned under items 5 and 6, leaving an indeterminate fraction of estimated benefit which may be realized but cannot be foretold.

Whether or not freight cars should be acquired is generally less perplexing. A management may hesitate to commit itself to heavy expenditures when uncertain profit is to be derived from sources quite unpredictable. In the general case, values can be reliably assigned to factors represented by items 2 to 6 inclusive.

The freight car presents an interesting study with respect to the peculiar conditions surrounding its operation. Since, for many commodities, the freight car is no more than a spacious container which may be moved from one point to another, there is the ever present temptation to neglect its maintenance during dull periods. This accounts for unpainted exteriors, sagging car doors, rusted-out slope sheets, and perpetuated use of obsolete accessories in many instances.

Moreover, freight cars move in unrestricted service over the nation's railways. Sometimes the owning company derives a small fraction of its service. Whatever its cost, appearance and condition, the per diem rental revenue is unaffected. A car, much of its life to be spent on foreign roads, is then the greatest producer of net revenue if secured at the least cost, provided current maintenance expense is not excessive. A railway dislikes to witness its own costly cars exchanged in home service for minimum cost types of foreign ownership. The tendency is to watch closely the initial investment per car and in many cases produce an inferior type.

Still, since inexpensive cars may be leased at one dollar per day and this may be quite profitable if cars are cheaply constructed, some railways are tempted to build beyond their needs, seeking per diem rental. This trend serves to provide more cars than are required for the most efficient conduct of the service and is, in part, responsible for the exceptionally poor utilization record of the average freight car.

A Case Study of Freight-Car Economics

The complication of the analysis of equipment economics may almost be said to be peculiar to the transport industry. Certainly it is when related to the machinery of production.

Consider the case of a railway which, suffering 10 years of reduced traffic and disappearing net profits, has adhered to its equipment retirement program but failed to make replacements contemplated in the same long term plan. Its total freight-car inventory provides little surplus over present demands. Even though no upturn in the traffic trend were experienced, it could suffer no further diminution in the number of freight cars active on line. This number includes 2,500 coal-carrying cars of 50 tons capacity, 25 to 30 years old, of composite steel and wood construction, employing essential accessories and specialty parts of obsolete design. As scrap, each car will command a value of but $100, yet the value of each is set up in the capital account of the owning railway at $1,265. An estimated expenditure of $1,200 per unit will produce a car which is properly fitted for interchange service and probably capable of continued use for 15 years. A new car of similar type, but modern in all respects, can be purchased for $2,165.

To make the old car suitable for modern service is, in itself, quite costly. Is it more costly than to accept a nominal salvage value of $100 and seek means of disposal of excessive book value in scrapped equipment? It might, of course, be possible to charge the loss to operating expense immediately as would be required were the 2,500 cars in question to be destroyed by accident.

Eight distinct but sometimes related plans of acquirement have been mentioned: (1) Outright purchase; (2) rental agreement; (3) per diem rental through Car Service Division; (4) general credit; (5) financing through equipment trust; (6) purchase through rental from car builder's subsidiary rental agency; (7) same as (6) except construction through Reconstruction Finance Corporation funds, and (8) construction of cars in railway owned and operated shops.

Outright purchase cannot be considered in the present case. A railway which suffers such an equipment situation would be in a weak financial position, particularly as regards liquid funds. In the next instance, a separate rental agreement would be impractical and, if entered into, would necessarily be upon a basis no less costly than that available under item 3. As in the case of outright purchase, acquirement on general credit would doubtless be at disproportionately high cost if possible at all.

There remain the most practicable purchase plans as described under items 5, 6 and 7. Of these, item 7 is most attractive since it presumes the availability of funds at lowest rates. Construction in railway operated shops is seldom economical and the justification for the plan resides wholly in excellence of erection facilities. When complete shop equipment, such as that essential to car production at low cost, is properly and honestly amortized, its total cost distributed over a nominal production as is generally the case, company-built cars oftentimes can be shown to be extravagantly acquired, though they may furnish employment to trained personnel during periods of normally depressed shop operations. This

plan will be neglected since it is subject to no general analysis. Costs vary widely in different localities and in specific shops.

Basically, then, there are four practicable methods whereby the railway in question can acquire serviceable cars: (1) Reconstruction of existing equipment; (2) arranging for deferred payment through equipment trust; (3) per diem rental at one dollar per car day, and (4) entering into a form of four-party agreement whereby a car builder's associate company or another trustee borrows federal funds and arranges with a car builder for construction of cars to be rented to a railway on a contract basis of monthly, quarterly, or annual payments. Such payments may be expressed on a per diem basis and are sufficient to cover all costs of ownership, maintenance, taxes, etc., and retire the purchase price in 15 years, the term of R. F. C. loans extended for the purpose. Title then accrues to the railway. All of the complications of the several plans, particularly as they are affected by the necessity for disposing of the excessive book value of the old cars, are disclosed in the following analyses:

Table I—Analysis of Plan I—Rehabilitation by Repair

Present ledge value of car	$1,265.00
Labor and material to repair	1,200.00
Total investment represented by repaired car	$2,465.00
Less salvage value	100.00
Virtual net value of repaired car to be depreciated	$2,365.00
Annual Cost	
Taxes (on basis of cost to repair plus ledger value), $2,465 at 1 per cent	$24.65
Interest (average 4 per cent) $2,465 at 2 per cent	49.30
Depreciation (uniform—15 years) $2,365 at 6.67 per cent	157.67
Repairs:*	
Running	50.00
Heavy ($500 in ninth year, cost distributed uniformly over 15 years)	33.33
Miscellaneous (A. A. R. recommendations)	25.00
Total annual cost for 15 years	$339.95

* Based upon several analyses of data, A. A. R. recommends the compromise assignment of uniform running repair cost of $50 per year, and one heavy repair every ninth year at a cost of $500, irrespective of car age or type. Several individual railway records show the running repair cost to increase with car age, affected by periodic heavy repair. Similarly, heavy repair cost is shown to be required more often or to be more costly as cars grow older. A. A. R. recommendations are followed in these analyses.

Alternate Plans of Rehabilitating Freight Car Service

Plan I assumes the existence of cars of the general type required, whose physical condition is such that a serviceable car can be built up from each essential structure at a cost materially less than that of a new car. It also assumes a life expectancy derived by rebuilding which permits the amortization of the rebuilding cost at a rate not in excess of that arising from new car acquirement. Money for the rebuilding of these cars at $1,200 each to provide a life expectancy of 15 years, is available at 4 per cent. (See Table I.)

Plan II assumes the normal purchase of new cars, either as additions to existing rolling stock inventory or to replace retired, fully depreciated equipment. It has been common practice for railways to make a cash deposit of 25 per cent of the purchase price, securing a loan to cover the unpaid balance. Accounting procedure retires the loan by charging operating expense with normal rates of depreciation or some higher rate according to requirements for repayment of principal specified in the contract. The railway retires the old 50-ton composite coal cars, purchasing new 55-ton A. A. R. hopper cars to replace them. Cars are depreciated in 34.6 years, the average age as reported by the A. A. R. The depreciation rate is 2.6 per cent of the total cost involved for this period, assuming final salvage value of 10 per cent, or 2.9 per cent of the total cost less salvage value. (See Table II.)

Plan III is the simplest method by which cars can be acquired and generally the most costly. It assumes ownership of an insufficient number of serviceable cars of a specified type to fulfill the requirements of a railway for

Table II—Analysis of Plan II—Replacement by Purchase

Cost of new 55-ton hopper car (estimate of American Railway Car Institute, 1935)	$2,165.00
Salvage value of each retired car	100.00
Net cost per new car	$2,065.00
Ledger value of each retired car transferred to new car on basis of salvaged parts recovered	1,265.00
Total capital burden of each new car	$3,330.00
Less salvage value at end of 34.6 years (10 per cent of cost new)	$216.50
Net value of new car to be depreciated	$3,113.50
Annual Cost (Uniformly Distributed Over Estimated Car Life)	
Taxes (on Basis of New Car Value) $3,330 at 1 per cent	$33.30
Interest (average 4 per cent) $3,330 at 2 per cent	66.60
Depreciation (uniform 34.6 years) $3,113.50 at 2.9 per cent	90.00
Repairs:	
Running	50.00
Heavy ($1,500 distributed over 34.6 years)	43.35
Miscellaneous	25.00
Total annual cost for 34.6 years	$308.25
Annual Cost (Actual Year-by-Year Expenditure as Influenced by 25 per cent Down Payment Required)	
First year:	
Taxes—$3,330 at 1 per cent	$33.30
Interest (average 4 per cent) $3,330 at 2 per cent	66.60
25 per cent payment	541.25
Repairs:	
Running	50.00
Heavy ($1,500 distributed over 34.6 years)	43.35
Miscellaneous	25.00
Total annual cost—first year	$759.50
Basis for capital charges after first year:	
Cost of new car	$2,165.00
Salvage value of retired car	$100.00
First year capital payment	541.25
Total credits	641.25
Net value of new car, second year	$1,523.75
Ledger value of each retired car transferred to new car basis of salvaged parts recovered	1,265.00
Total capital burden of each new car	2,788.75
Less salvage at end of 33.6 years (10 per cent of cost new)	216.50
Net value of car to be depreciated	$2,572.25
Annual Cost (After First Year)	
Taxes—$3,330 at 1 per cent	$33.30
Interest (average 4 per cent) $3,330 at 2 per cent	66.60
Depreciation (uniform 33.6 years) $2,572.25 at 2.98 per cent	76.55
Repairs:	
Running	50.00
Heavy	43.35
Miscellaneous	25.00
Total annual cost (second to thirty-fifth year)	$294.80

tonnage originating on its line. The rental basis is generally one dollar per day, settlement for the use of some car types being arranged on an agreed mileage basis. Assume that the railway retires old 50-ton composite coal cars, renting an equal number of cars to fulfill the service formerly rendered by them. The ledger value of the retired cars is immediately written off as a charge against the operating expense. In the first year, the total expenditure will be $1,265, less $100 scrap value, plus $365 per diem charges—a total of $1,530. Thereafter the cost will be $365 per car per year.

To assist the railways in maintaining in service a sufficient number of cars suitable for loading with all types of commodities, and recognizing the disproportionate expense involved in continuing in service cars of obsolete design, ill-suited to many uses to which they are put, R. F. C. loans have been made available for the purchase of new equipment where approved security can be presented. Loans for this purpose have been offered for several years, bearing interest at 4 per cent, the principal to be returned within a period of 15 years, payments being waived for two years after procurement of

the loan—that is, principal is returned in 13 equal installments.

Here it is assumed that the plan described is adopted in principle but is predicated upon the car builder's ability to finance the purchase of materials and the car building expense with R. F. C. funds, acquired on the same basis as that at which they are offered to railways. The car builder offers new cars to the railway, accepting as an initial payment on a new car, the salvage value of a retired unit where such is available. The exchange of an old car for a new one is not, however, essential to carrying out the plan. The car builder delivers to the railway cars built to the railway's specifications and bearing its marking. For such cars, the railway pays the car builder on a per diem rental basis or its equivalent.

This method of car acquirement is decidedly attractive, offering opportunity for railways to retire uneconomical car types, presenting new and highly adaptable cars to shippers, and improving the appearance of their properties and their service to shippers on their lines, all upon an equitable basis and without burdensome initial expense. Moreover, it stimulates car building at a difficult time, assisting toward the recovery of normal production schedules, not only for the car builders but for manufacturers of all types of equipment which together constitute the completed car. There are options in interpretation of the plan. The car builder derives minimum per diem rate which he can charge the railway for use of a new car to permit retirement of R. F. C. loan for the total value of the car in 15 years. The car builder operates the car during this period, assuming the responsibility for all charges. (See Table III.)

Table III—Car Builder's Per Diem Rate Under Plan IV

Cost of new 55-ton hopper car	$2,165.00
Salvage value to car builder of each retired car	100.00
Net value of new car to be amortized in 15 years, the duration of R. F. C. loan	$2,065.00
Annual Cost	
Taxes—$2,065 at 1 per cent	$20.65
Interest (average 4 per cent) $2,065 at 2 per cent	41.30
Depreciation (uniform, 15 years) $2,065 at 6.67 per cent	137.74
Repairs:	
Running	50.00
Heavy ($500 in ninth year, uniformly distributed over 15 years)	33.33
Miscellaneous	25.00
Total annual cost	$308.02
Per diem rate, 365 days	$0.845

Under these conditions, whereby the retired cars contain no parts which may be salvaged for use in construction of the new car and the entire car is liquidated as scrap, the car builder can afford to release new cars of A. A. R. standard design to railways at a per diem rate of 85 cents.

This analysis does not take advantage of the option which waives payments during the first two years since the railways should be able to support the nominal per diem rate and thus the car builder can meet all charges. Should this option be taken the taxes, interest, running repairs and miscellaneous expenses would amount to $178.25 for the first two years or 48.8 cents per day. For the third to the fifteenth year, including the depreciation in 13 annual installments, the total annual cost would amount to $334.26 a year, or a rate of 91.6 cents per day.

[The cost of this plan to the railroad was shown by the author in another table which includes taxes and interest on the undepreciated value of the retired car in addition to the builder's per diem charge of $308.02 per year, for the first fifteen years, amounting to about $371 per year. From the sixteenth to the thirty-second year inclusive, the annual costs include taxes and interest on the depreciated value, depreciation of this value in 20 equal annual increments, and $500 spent in heavy repairs in the 18 and 20 years, making a total of $226.20 per year.—EDITOR.]

Seldom is it a simple matter for railroads to evaluate the economics of equipment retirement—still more difficult do they find the problem of determining the type of substitute facilities which should be acquired. The matter of determining the economic status of any piece of production equipment in another industry is relatively simple and capable of reduction to a fundamental formula. One machine-tool builder has developed a compound slide rule whereby the influence of five or six factors may be instantly derived and the reasonable determination of the net economy becomes a matter of minutes. Where equipment necessities and equipment purchases are involved, railways are different and the fact adds measurably to their burdens.

At the moment, the cycle of equipment obsolescence is revolving at an accelerating tempo. We are still witnessing the turning point in railway transportation. The day of intensive use and minimum plant is at hand since there is no escape from the policy. Every unit of railway equipment is inevitably more costly to acquire and will be suitable for a briefer space of years.

Operating Lessons from Train Accidents

(*Continued from page 247*)

defective should not be placed in yard running or thoroughfare tracks where a large tonnage passes over them, as it is fair to assume that breaks will occur and derailments follow, and while the possibility of injury or loss of life is minimized, yet there still remain the potential accident and its consequence, be it much or little.

In combating highway grade crossing accidents, which are entirely too numerous, the railroads, in addition to conducting educational campaigns of their own, can also derive considerable benefit by participating in the activities of other agencies, to eliminate accidents of this type.

Although a complete analysis of reportable train accidents, including causes, etc., for the year 1938 is not available at the present writing, preliminary figures show that with a 14 per cent reduction in locomotive and motor train miles there was a decrease of 32 per cent in such accidents in 1938 compared with 1937. This marked improvement can no doubt be attributed to the greater interest displayed in the safety of operation on various railroads and this interest should not be allowed to lag. Continued grounding in rule fundamentals, both safety and operating, provides the greatest single factor in the reduction of accidents of all kinds. The application of the rules to the operation must be followed to see that they are understood.

A HIGHWAY PASSENGER "TRAIN", 70 ft. in length and comprising two coupled units connected by a flexible passageway, has been introduced on an express motor highway between Berlin and Munich, Germany, via Dessau, Leipsig and Halle. Named the "Gaubschat" train after its inventor, the vehicle weighs 33,069 lbs., is powered by a 150-hp. Diesel engine and has seating capacity for 78 passengers. The round-trip fare between its termini is quoted at 30 reichsmarks ($12), as compared with the cheapest rail rate of 40 reichsmarks ($16).

What Railroads Should Know About Scrap

A Revenue Producer—Vital to Steel Makers—Factors governing demand and price reviewed

Scrap Handling on the Burlington at Silvis, Ill.

The Institute of Scrap Iron and Steel has completed a compilation about scrap iron and steel which represents the first extensive effort of scrap dealers to explain the role played by scrap in present-day business and to correlate the factors which cause the fluctuations in demand and price. Finished iron and steel purchased by the railroads is now so largely made from iron and steel scrap and the railroads furnish so large a portion of the total iron and steel scrap produced in the country and derive so much income annually from its sale (approximately 70 million dollars in 1937) that information as prepared by the Institute is presented in part as follows.

EIGHTY per cent of all scrap originates in industry, including the railroads, and is termed industrial scrap. Much of the heavier and better grade of scrap falls into this category. The remaining 20 per cent is collected from the countryside and cities by small dealers.

A small proportion of the scrap is usable in its original form. Railroad rails no longer safe for service or too light in section may be heated and slit into three parts, and rerolled into fence posts, bed steads or bed rails, and into small bars or twisted rods for reinforcing for concrete highways, bridges, and buildings. Railroad freight car axles are heated and forged to smaller diameters for a wide variety of uses. Washers and similar small articles may be stamped from strips of skeleton steel which in themselves are the by-products of an earlier stamping operation. Where scrap is used in its original form it is the equivalent of new prime material.

Over 95 per cent of all scrap iron and steel is charged into the open-hearth furnace where steel is made, the blast furnace where iron ore is reduced to pig iron, the gray iron cupola or malleable air furnace whose products are special irons for castings, or the electric furnace from which special steels emerge. In a recent typical year, open-hearth steel furnaces took 69.5 per cent of all the scrap consumed in this country, gray iron cupolas 17 per cent, blast furnaces 6 per cent, electric steel furnaces 4.5 per cent, malleable iron furnaces 2 per cent, and miscellaneous 1 per cent.

Steel Is One Half Scrap

Ninety per cent of all the steel that is produced in the United States is open-hearth and scrap comprises approximately half of the raw materials charged into the furnace. In a recent typical year the actual proportion

of material used was 49.6 per cent scrap to 50.4 per cent pig iron.

Sometimes the proportion of scrap used in the open-hearth steel furnace is determined by the extent of the reserves of iron ore and coal carried by the larger producers of steel. Confronted with heavy fixed charges on their mineral lands and the facilities for mining and transporting these products, these companies find it economical to consume a minimum tonnage of coal and ore each year upon which to spread these charges. Therefore, in off years a higher percentage of hot pig iron is used than in good years. Only one of the leading producers of steel uses hot metal altogether, but for the scrap trade there is an offset because several moderate size interests use practically all scrap in their open-hearths.

Scrap and Pig Iron Consumption—Gross Tons

	Home Scrap	Purchased Scrap	Total Scrap	Pig Iron
1935	13,346,752	13,068,578	26,415,330	20,505,037
1936	18,901,389	17,456,744	36,358,133	30,098,634
1937	19,871,033	18,135,239	38,006,272	34,056,527

Normally, Pennsylvania is the leading scrap-consuming state. In 1937, the latest year for which detailed statistics are available, Pennsylvania used 24.67 per cent of the tonnage, Ohio 19.97 per cent, Indiana 10.04 per cent, Illinois 9.8 per cent, Michigan, Wisconsin, and the Dakotas 9.02 per cent, New York 5.52 per cent, Kentucky and Maryland 4.10 per cent, West Virginia 2.47 per cent and Missouri 1.45 per cent.

Middlemen and Scrap

Occasionally when a fabricator of iron and steel produces scrap which is marketable in its original form or has the facilities for preparing it, he may sell direct to the consumer of scrap. But direct trading is not always advantageous because the requirements of consumers, both as to tonnage and specification, rarely parallel the offerings of scrap by producers. Hence the scrap dealer, with his wide and ready knowledge of markets, performs the service of a middleman. While the scrap industry does not handle home scrap it does deal in an overwhelming percentage of purchased scrap.

The great majority of scrap moves by railroad from the producer to the dealer's yard and thence to the consumer. No small tonnage, however, is now carried by barge, the scrap in many cases supplying a return cargo, supplementing shipments of steel by water to the Southwest and of coal to the Northwest on inland rivers. An increasing proportion has been moving on the Great Lakes in steamers equipped with cranes and magnets. For short hauls, trucks are being used on a broadening scale.

There are 75 separate classifications of scrap in the Bureau of Standards' code of specifications. As the trend toward lighter and more highly alloyed steels becomes accentuated, the responsibility of the scrap dealer in segregating alloys becomes more pronounced. One-half of 1 per cent of manganese, copper, tin, lead, zinc, or other elements may ruin a heat of steel. The unskilled scrap yard worker soon learns to distinguish rolled steel from cast iron but only a laboratory analysis can detect alloys and scrap yards are, to an increasing degree, segregating materials from metal-working factories known to use certain alloy steels.

The size of scrap is equally important, and is usually dictated by the processes of handling. To fit into the charging boxes of open-hearth steel furnaces, No. 1 heavy melting steel must not be over 18 in. in width nor more than 5 ft. long, but at the same time it must be ¼ in. or more in thickness for economical melting. This grade, which usually is the gage of price, includes rail ends, couplers, knuckles, structural shapes, heavy forgings, steel castings, angle bars, plates, and other similar heavy material, no piece of which must weigh less than 5 lb. No. 1 machinery cast for gray iron cupolas must not be over 24 by 30 in. in dimension nor weigh over 150 lb. per piece. In this classification most castings are acceptable, although brake shoes, stove scrap, pipe and burnt iron are barred. Compressed sheet scrap must have a density of not less than 75 lb. per cu. ft. Steel rails for remelting must be cut to 3-ft. lengths. Railroad car and locomotive couplers must be stripped clean of all attachments. Seamless or welded tube scrap must not be over 0.04 per cent in sulphur or phosphorus and must be free from alloys. For other grades, specifications are equally exacting.

As a result, the modern scrap yard is a highly mechanized place. Electrically-controlled overhead or crawler-type cranes, from which are suspended magnets or buckets, handle material mechanically. The oxy-acetylene torch is used to reduce large pieces to specification size. Cast iron too large to be handled otherwise is spotted within protective netting and a ball weighing half a ton or more is dropped from a height of 40 to 50 ft. Mechanization of scrap yards has been accelerated by the rising tide of light-weight scrap which in turn is the direct result of the increasing proportion of light-weight steel which is rolled by the mills to supply materials to manufacturers of consumers' goods.

Many railroads have elaborate systems of reclamation. Bolts, nuts, washers; in fact, all iron and steel parts, which have been discarded or which may have been picked up on the right of way, are assembled at central points. Certain of this material is rethreaded or otherwise made available for further service, and the remainder is offered for sale. One large eastern railroad averages over 10,000 tons of scrap a month offered to dealers, much of this being demolished locomotives and freight

Railroad Scrap Sorted and Cut Ready for Market

Junking Old Freight Cars on the Southern Pacific

cars withdrawn from service. Thereby it picks up about $2,000,000 in a good year.

Stock Piles and Prices

The large stocks which some dealers carry are not necessarily an indication of speculation for the rise. In some instances the close relationship of large dealers to mills results in the former sometimes carrying what amounts to the mill's inventory. Frequently dealers become involuntarily speculators for the reason that they are under contract to buy all of the scrap from manufacturing plants. They must take the accumulation of these plants, even when there is no ready market, and not infrequently, to get desirable scrap, dealers must also purchase slow-moving grades which they must carry in their yards indefinitely until a market appears. Increasingly, scrap dealers prefer to move material in steady volume, counting upon the averages to assure them a profit.

No steel mill or foundry has ever missed a heat that could be blamed on the scrap industry. The first line of reserve is the stocks which dealers carry in their yards. Even the smallest dealer rarely permits his inventory to fall below 20 tons, while larger interests sometimes stock 50,000 tons. In the spring of 1939 a canvass disclosed that the supply of scrap in dealers' yards was equal to a six-months requirement of steel mills and foundries at the then current rate of melting.

The second line of reserve is the stocks maintained by consumers. The small foundry may have only a few tons. Certain large steel mills consider 100,000 tons a minimum backlog and not infrequently their piles may reach 200,000 tons. It is estimated that consumers of scrap normally have a two-month supply on hand. Thus the combined dealer and consumer stocks provide a cushion of about eight months. Back of these two reserve lines is a pool or reservoir of scrap that is large but intangible. Normally, large scrap-consuming areas draw their supplies from a circle of which the freight rate is the radius. Each dollar that the price of scrap advances enlarges this circle and makes profitable the collection of material which previously it would not have been attractive to salvage.

No Shortage in Sight

The American Iron & Steel Institute has estimated that the amount of iron and steel currently in use in the United States in all forms is 1,050,000,000 tons. Subject to the toll taken by corrosion, all this is potential scrap. The average life of all steel is estimated at 33 years. The supply of scrap is thus self-perpetuating. As industrial operations expand, more steel is consumed and automatically more scrap is produced in the processes of fabricating it. Hence, with dealers and mills carrying a supply adequate for approximately eight months, the first impact of increased iron and steel production, and hence also of increased iron and steel consumption, would be cushioned, and very shortly thereafter a rising stream of scrap would emerge from metalworking factories to satisfy the increased requirements of steel mills and foundries.

Obsolescence is also a factor in determining the supply of scrap. A railroad with hundreds of freight cars and locomotives stored on sidetracks will refuse to scrap or sell this equipment when the scrap market is low, but given a rise of several dollars a ton, it becomes profitable to convert this hoard of rusted equipment into new dollars.

Supply and Demand in Scrap Sales

In the last analysis, the law of supply and demand governs the price and few commodities are so sensitive to this law. From December 31, 1918, to May 31, 1939, exactly 245 months had elapsed since the termination of World War price-control, yet in only one month in that period did the average market price of No. 1 heavy melting steel at Pittsburgh, which is the bellwether of the market, fail to fluctuate. In this period of more than 20 years, No. 1 melting steel at Pittsburgh ranged from $8.37 to $28.60 per gross ton.

As the accompanying table discloses, the price of scrap moves in almost perfect synchronization with production

Scrap Prices and Steel Production

	Steel Ingot Production Gross Tons	Monthly Average Price No. 1 Heavy Melting Steel, Pittsburgh Per Gross Ton	Composite Pig Iron Price Per Gross Ton
1937			
Jan.	4,718,436	$19.55	$20.25
Feb.	4,414,699	19.88	20.50
Mar.	5,218,326	22.89	22.85
Apr.	5,070,867	22.66	23.25
May	5,151,909	19.43	23.25
June	4,184,723	18.44	23.25
July	4,556,304	19.54	23.25
Aug.	4,877,826	21.85	23.25
Sept.	4,289,507	20.18	23.25
Oct.	3,392,924	16.87	23.25
Nov.	2,154,365	13.96	23.25
Dec.	1,473,021	13.46	23.25
1938			
Jan.	1,732,764	14.25	23.25
Feb.	1,703,726	14.19	23.25
Mar.	2,012,406	13.60	23.25
Apr.	1,925,166	12.68	23.25
May	1,806,805	11.51	23.25
June	1,638,277	11.29	22.98
July	1,982,058	14.07	19.61
Aug.	2,546,988	15.39	19.61
Sept.	2,657,748	15.25	19.82
Oct.	3,117,934	14.85	20.57
Nov.	3,572,220	15.21	20.61
Dec.	3,143,169	15.25	20.61
1939			
Jan.	3,186,834	15.74	20.61
Feb.	2,954,883	15.72	20.61
Mar.	3,364,877	15.82	20.61

Ingot production, the American Iron & Steel Institute. No. 1 heavy melting steel price, Daily Metal Trade. Composite pig iron price, Iron Age.

of steel ingots. Indeed, the movement in scrap prices frequently foreruns variations in the rate of steel production, and hence scrap increasingly is regarded as a barometer of the business situation. There is, of course, a degree of relationship between scrap and the material which it displaces, which is pig iron, and scrap rarely

(*Continued on page 257*)

How Congress Left Transport Bills

S. 2009 advanced to conference stage as session ends with Chandler and bridge measures enacted

WASHINGTON, D. C.

PASSAGE of the Chandler voluntary railroad reorganization bill and the so-called bridge bill comprised the principal finished business insofar as railroad legislation was concerned when the first session of the Seventy-Sixth Congress adjourned sine die on August 5. The Chandler act gives legal sanction to such plans for readjustments of capital structures as have been worked out by the Baltimore & Ohio and Lehigh Valley; while the bridge bill is designed to relieve the railroads of part of the cost of reconstructing bridges required to be altered in connection with waterway improvements carried out by the federal government.

Meanwhile, as had been anticipated, the general transportation legislation proposed in S. 2009 was left at the conference stage after the Senate and House of Representatives had passed different versions of that bill carrying amendments to the Interstate Commerce Act and provisions for the regulation of water carriers by the Interstate Commerce Commission. Conferees on the measure held a preliminary meeting on August 4 and decided to begin negotiations sometime in December in an endeavor to frame a conference report for presentation early in the next session which convenes in January. Since it will be the same Congress that returns next year all measures before it retain their present status.

Senate Committee to Investigate Forwarder Set-Up

Among other measures enacted in addition to the above-mentioned Chandler and bridge bills was the amendment to section 77 of the Bankruptcy Act to provide that personal injury claims of employees of roads in reorganization shall be charged to operating expenses, and the act which extends R. F. C. lending powers until June 30, 1941. Also, the Senate resolution which authorizes the upper body's committee on interstate commerce to investigate railroad methods of handling forwarder or consolidated carload freight traffic, l.c.l and express traffic. Chairman Wheeler has assigned that job to a sub-committee consisting of himself and Senators Hill, Democrat of Alabama, and Reed, Republican of Kansas; hearings are tentatively set for the latter part of November. The House version of S. 2009 provides for the regulation of forwarders by the I. C. C., but the Senate version has no such provision.

The Railroad Retirement Board got the Railroad Unemployment Insurance Act amendments which it wanted for the purpose of facilitating administration of that law; while the general tax bill embodied potential sources of relief for railroads in provisions for repeal of the undistributed profits tax and those which will permit roads in financial difficulties to purchase their own obligations at a discount without being liable for capital-gains taxes on the paper profits. The I. C. C., Railroad Retirement Board, National Mediation Board and National Railroad Adjustment Board were exempt from the government reorganization act, but the President did exercise the powers granted therein to transfer the Inland Waterways Corporation from the War Department to the Commerce Department; to abolish the office of Director General of Railroads and the National Bituminous Coal Commission; to transfer the R. F. C. to the new Federal Loan Agency, now headed by Jesse H. Jones, former R. F. C. chairman; and the Bureau of Public Roads from the Department of Agriculture to the new Federal Works Agency.

The Evolution of S. 2009

Senate and House versions of S. 2009 embodied so much of the committee-of-six program as the respective committees on interstate commerce would accept, and both bills were supported by the railroads and railroad labor, who professed until nearly the end to have hopes for completion of Congressional action at the one session. Such hopes, however, were not shared by other observers who began early in the session, as noted in the *Railway Age* of March 11, page 421, to predict that adjournment would find the legislation pending at some stage short of final enactment.

The House committee got an early start when it began hearings January 24 on H. R. 2531, the omnibus bill—a proposed "Transportation Act of 1939"—introduced on January 13 by Chairman Lea. Ten weeks of hearings on this bill, and on the so-called committee-of-six bill (H. R. 4862) also put in by Mr. Lea, closed on March 30; but it was not until July 18 that the committee reported a bill to the House in the form of an amendment to S. 2009 which had meanwhile come over from the Senate where it was passed on May 25. The Senate bill was not introduced until March 30, the day on which the House hearings closed, but Chairman Wheeler expedited the hearings by holding morning and afternoon sessions and reported the measure to the upper body on May 17. As noted above it was passed the following week on May 25, or two months before the House acted on July 26.

During the final week of the session Senator Reed, who is a member of the conference committee on S. 2009, sent a letter to traffic men throughout the country, asking their opinion on the idea of embodying the new legislation in a rewritten or codified Interstate Commerce Act, which is the form recommended by the committee-of-six and adopted by the Senate. The House bill on the other hand takes the form of amendments to the present Interstate Commerce Act including a Part III for the regulation of water carriers. As Mr. Reed views the situation there is no "irreconcilable difference in the amendatory features of the two bills," but he anticipates that the first question to come before the conference committee will be the pattern to follow. He goes on to say that a disinterested approach would perhaps favor a proper codification of the transport regulatory law, leaving the question of whether a satisfactory job in that connection was done in the Senate version of S. 2009. It is on that question that Mr. Reed is seeking the opinions of the traffic men.

Another letter has been written by the Senator from Kansas to Representative Jones, Democrat of Texas, with reference to the amendment the latter got put into S. 2009 on the floor of the House to require the Interstate Commerce Commission to prescribe export rates on

agricultural products on the same relative basis as it permits the railroads to publish export rates on manufactured articles. Mr. Reed agrees "in principle" with the plan of distinguishing between commodities moving for export and the same commodities moving in domestic commerce; but he does not like the idea of making a fixed differential or of relating the differential to be allowed to other forms of traffic.

Bridge Bill Put Through After S. 2009 Stalled

The above-mentioned bridge bill carries out one of the recommendations of the committee-of-six. Its provisions were embodied in the House version of S. 2009, but the Senate handled the matter in a separate measure which was the one finally enacted when it became evident that S. 2009 would go over until the next session. Other committee-of-six recommendations embodied in separate bills did not fare so well. These included bills for repeal of land-grant rates and for the establishment of a special court for handling railroad financial reorganizations. The latter passed the Senate, but was still before the House committee on judiciary when adjournment came. Separate land-grant repealers were not acted upon in the Senate, while the House embodied provisions for conditional repeal in its version of S. 2009.

The session was notable for the lack of the usual crop of "make-work" bills sponsored by organized railroad labor, although it did produce evidence that the union leaders do not always practice what they have preached in that connection. A spokesman for furloughed train and engine service employees appeared at House committee hearings on the Lea bill to protest against the "mileage hogging" of the "old heads" in an appeal for the enactment of legislation which would limit train and engine service men to a maximum working month of 26 days or the equivalent. The absence of the "make-work" bills was due to labor's cooperation in the effort to put over the committee-of-six program; while the railroads meanwhile refrained from pressing for the Railway Labor Act amendments called for in the Railroad Program.

The bill introduced by Representative Martin, Democrat of Colorado, to repeal the long-and-short-haul clause did not get a hearing, nor was the committee-of-six recommendation in that connection embodied in either the Senate or House versions of S. 2009. The former does, however, have a provision which is designed to expedite fourth-section procedures.

Pending Bills Are Many and Varied

Among other bills pending when adjournment came was the so-called "straight-jacket" bill which would give the I. C. C. regulatory authority over "outside investments" of railroads; it passed the Senate as S. 2903, the modified version which railroad counsel agreed not to oppose. Then there was the resolution authorizing the I. C. C. to make a preliminary investigation of the postalized-fare plan being promoted by John A. Hastings, former New York State senator, and the Lemke bill providing for a trial of postalized railroad rates; the former passed the Senate but did not come up in the House. Also, the record rivers and harbors bill which passed the House with authorizations totaling $83,000,000 but which remained on the Senate calendar after it came from the Senate committee on commerce as a $407,000,000 measure; the proposed Shipstead amendment to the Federal Trade Commission Act which would prevent the inclusion of rail rates in the destination selling price of goods shipped to such destination by another form of transport; bills to prohibit discrimination in the granting of transit privileges; super-highway bills; resolutions calling for an I. C. C. probe of interritorial freight rates which were embodied in S. 2009; the through-routes bill designed to give the I. C. C. power to prescribe through routes and joint rates without reference to the short-hauling of any carrier, which was embodied in the Senate version of S. 2009; and bills to make it unlawful to operate cabooses not equipped with electric lights shedding two ft.-candlepower of light on the working area of the caboose desk.

Also, bills to permit the R. F. C. to loan money to railroads desiring to purchase their own obligations at a discount, although similar provisions are included in the House version of S. 2009; bills to extend the services of the Inland Waterways Corporation; the Wheeler bill to give the I. C. C. regulatory authority over railroad holding companies; various proposals to liberalize the Railroad Retirement Act; bills for the regulation of water carriers by the Maritime Commission; proposed amendments to the Interstate Commerce Act to accord shippers of fresh meats, packing-house products or dairy products the right to furnish their own refrigerator cars; bills to amend the law relating to the liability of railroads for injuries to employees; the Osmers bill to create a National Transportation Authority to act as advisor to the President and Congress on transport matters; and the joint resolution offered by Senator Reed to require the railroads to develop plans for pooling their l. c. l. freight by June 1, 1940.

To the Senate went a series of reports from Senator Wheeler's rail finance investigating committee, out of which came the Montanan's above-mentioned proposals to regulate railroad holding companies and "outside investments" of the carriers. The Agricultural Department appropriation bill carried $40,000,000 for grade-crossing elimination and protection work, while the War Department civil functions appropriation bill provided $96,000,000 for rivers and harbors work. In the Third Deficiency Appropriation Bill, the I. C. C. got a supplemental appropriation of $40,000 to be used for cost-finding work by the Bureau of Statistics.

President Roosevelt's proposed lending-spending program was stopped in the House after the Senate had passed its version with the provision for a revolving fund for railway equipment loans eliminated; the House version, providing $250,000,000 for railway equipment, is still on the calendar since its defeat for the session was accomplished by the lower branch's refusal to adopt a rule providing for its consideration. Beaten also was the bill which would have authorized the construction of the Florida Ship Canal, the Senate rejecting the measure which was reported without recommendation from its committee on commerce after President Roosevelt urged a renewal of consideration of the project.

I. C. C. Made 100 Reports on Pending Measures

All in all while the session produced relatively little in the way of finished goods so far as railroad legislation is concerned, its closing balance sheet might be said to have many and varied entries under the "work-in-process" heading. The I. C. C.'s legislative committee made approximately 100 reports on various pending measures while that committee's chairman—Commissioner Eastman, who is also chairman of the commission—made 11 personal appearances before Congressional committees, being accompanied on some of those occasions by other members of the commission who supplemented his presentation.

A lively interlude of the session was the furor created

by President Roosevelt's nomination of Thomas R. Amlie, left-wing Wisconsin Progressive and former member of the House, to succeed B. H. Meyer as a member of the I. C. C. The President withdrew Mr. Amlie's name at the nominee's request after it became evident that Senate confirmation would be denied. The position finally went to W. J. Patterson, former director of the commission's Bureau of Service, while Mr. Amlie was appointed to a $4,500-a-year position as an assistant attorney general in the Department of Justice's Lands Division in Wisconsin. Meanwhile, the Senate had confirmed the President's reappointment of Commissioner Lee, and his appointment of Commissioner Alldredge to succeed former Commissioner McManamy. Labor was disgruntled when Mr. McManamy was dropped, but its appeasement came with the appointment of Mr. Patterson.

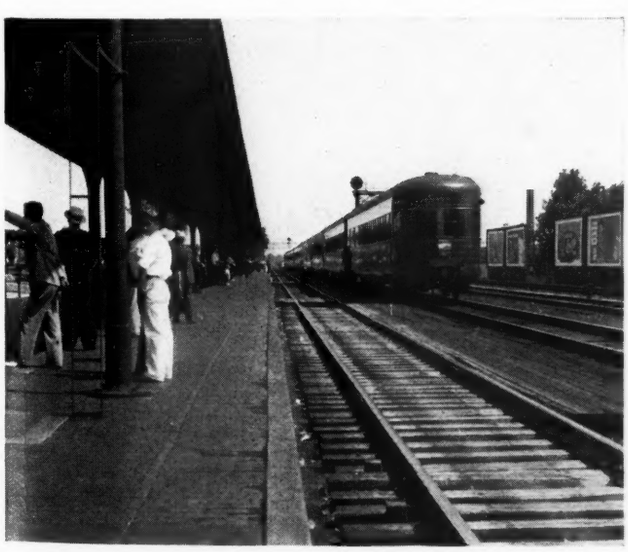
Transport Legislation "of Major Importance," Rayburn Says

In an April 7 radio address on "The Work of Congress" House Majority Leader Rayburn stated it to be his opinion that the railroad legislation carried in the Chandler act and that pending in S. 2009 "is of major importance." Previously he referred also to the above-mentioned feature of the tax bill which "permits a corporation in unsound financial condition to redeem its bonds, notes or other evidences of indebtedness in existence on June 1, 1939, at less than their face value without the recognition of gain if such redemption occurs after the enactment of the law and in a taxable year beginning prior to January 1, 1943." This provision, Mr. Rayburn added, "will result in a real incentive for railroads and other corporations to liquidate their indebtedness and place themselves upon a firm financial basis."

"I do not believe," the House Majority Leader said in another place, "that the American people want government ownership of railroads. I certainly do not. One of the surest ways to prevent it is to enact fair and just transportation legislation that will bring under government control all instrumentalities of interstate commerce. The railroads are now and have been for some time what may be called a 'sick' industry. Many railroads have not been able to collect enough revenue to even meet their fixed charges, much less pay dividends. The recent session of Congress—both House and Senate—enacted legislation bringing under regulation all forms of transportation in an effort to stop cutthroat competition and have a well-rounded transportation set-up in the country. These bills are now in conference between the House and the Senate and it is the hope that an efficient workable law will come out of these deliberations.

"A railroad reorganization bill was passed, which, in my opinion, will save two or three railroads in this country from going through tortuous and expensive bankruptcy proceedings."

* * *



The Pennsylvania's New All-Coach "Trail Blazer" Shown Eastbound at Englewood Union Station (Chicago) on the Third Day of Operation

What Railroads Should Know About Scrap

(*Continued from page 254*)

exceeds the price of pig because consumers could purchase more of the latter, which incorporates the elements of iron ore, labor, and other cost factors.

The dealer in scrap works backward from his selling price, which is the level consumers will pay, bearing in mind that scrap is a substitute for pig iron. From this selling price the dealer subtracts the freight to the consumer, the cost of handling and preparation, and the remainder is the price he can afford to pay the producer of scrap for his accumulation.

Curiously enough, volume increases the price which the consumer pays. A dealer will ask more per ton on an order of 10,000 tons than on an order of 100 tons because the larger tonnage is more difficult to assemble. Scrap prices are not made on any exchange, but they are widely disseminated through the trade press. Sometimes the market is made by offers of consumers, or in dull times by the willingness of dealers to buy. The level of prices is of less importance to the trade than the margin of profit. As a matter of fact, the lower the price the less capital is required by the dealer.

Exports of Scrap from the United States in Gross Tons

	United Kingdom	Canada	Japan	Italy	Germany	Poland
1929	2,807	111,849	208,260	92,377	20,304	75,031
1930	4,177	103,643	168,186	32,434	6,783	5,056
1931	1,947	68,210	48,036	2,176	2	2,550
1932	590	45,145	164,001	6,678	134	4,350
1933	6,062	39,701	547,539	114,419	14,111	29,901
1934	134,434	54,484	1,168,496	225,644	10,882	123,726
1935	277,366	96,128	1,117,973	382,775	4,113	36,627
1936	364,874	63,712	1,057,621	285,126	6,799	31,104
1937	845,216	188,310	1,901,202	381,394	88,153	275,337
1938	390,319	92,217	1,381,901	437,025	230,903	148,479
Total	2,027,792	863,399	7,763,215	1,960,048	382,184	732,161

Scrap is usually sold delivered to the consumer's plant. Except for the cast grades, which are usually quoted on a net ton, scrap transactions are based upon a gross ton of 2,240 lb. Seeking the most profitable market, dealers normally sell to consumers or brokers whose delivered price minus the freight offers the highest net return.

The price of scrap has an important bearing upon the supply. When mills or foundries arrive at a price which they will pay, and this price, of course, is largely determined by what the finished products made from the scrap will bring, the scrap dealer must subtract his costs and ascertain what he can afford to pay for unprepared scrap. Sometimes this latter price is so low that it discourages collection. Meanwhile, scrap steadily accumulates, awaiting only a higher price to stimulate its collection. Hence the supply of scrap dries up in periods of low markets and appears almost miraculously in rising markets.

Table Tells of Tie Renewals in 1938

Data reported to A. R. E. A. by Committee on Ties, taken from annual reports of the railways, give figures for last year

SHOWING the effect of reduced earnings, 96 railways inserted in renewals less ties per mile of maintained track in 1938 than in 1937, while only 39 roads renewed more ties, and 1 road applied the same number, according to a report made to the American Railway Engineering Association by the Committee on Ties. These and other important comparisons can be drawn from the tabulation of statistics relating to tie renewals compiled by the Bureau of Railway Economics from reports made to the Interstate Commerce Commission by the roads, and reproduced here in condensed form. These statistics cover the tie renewals

Statistics of Crosstie Renewals on Leading Railroads in the United States and Canada for the Calendar Year Ending December 31, 1938

Road	Miles of maintained track occupied by wooden crossties	Total number of wooden crossties renewed in 1938	Number of wooden crosstie renewals per mile of maintained track		Per-cent of wooden crosstie renewals to all ties in tracks		Wooden ties untreated (U)		Wooden ties treated (T)		Weighted average cost per wooden crosstie	Cost of wooden crosstie renewals per mile of maintained track	Cost of wooden crosstie renewals per thousand equated gross ton-miles (cents)
			1938	5-year average	1938	5-year average	Per cent applied	Average cost‡	Per cent applied	Average cost‡			
NEW ENGLAND REGION													
Bang. & Aroos.	830.18	157,788	190	194	6.6	6.8	100	$0.57	...	...	$0.57	$109	6.76
B. & M.	3,228.86	235,145	73	86	2.5	2.9	12.7	0.84	87.3	$1.53	1.44	105	2.76
C. N. R. (lines in New Eng.)	250.16	32,472	130	111	4.2	3.6	22.6	0.64	77.4	1.20	1.07	139	6.61
C. P. R. (lines in Me.)	213.19	22,813	107	146	3.7	5.0	...	...	100	1.44	1.44	154	2.96
C. P. R. (lines in Vt.)	131.36	7,282	55	53	1.8	1.6	...	...	100	1.26	1.26	70	1.81
Cen. Vt.	503.63	50,337	100	139	3.5	4.6	2.2	0.79	97.8	1.52	1.50	150	3.96
Me. Cent.	1,232.58	249,209	202	206	6.7	6.8	55.2	0.79	44.8	1.73	1.21	245	9.61
N. Y. Connecting	25.98	7,728	297	262	9.3	8.2	...	...	100	1.52	1.52	453	4.01
N. Y., N. H. & H.	4,122.91	288,774	70	73	2.3	2.4	...	...	100	1.29	1.29	90	2.05
Rutland	499.93	28,726	57	91	1.9	3.0	...	...	93.6*	1.33	1.33	77	2.80
GREAT LAKES REGION													
Ann Arbor	407.62	36,572	90	103	3.0	3.5	...	...	100	1.42	1.42	127	4.13
Cambria & Ind.	63.70	21,813	342	309	13.1	11.6	59.1	0.90	40.9	2.08	1.39	475	24.38
D. & H.	1,455.81	106,302	73	97	2.4	3.2	0.2	1.08	99.3*	2.12	2.12	154	3.01
D. L. & W.	2,375.80	135,564	57	91	2.0	3.1	...	...	88.3*	1.67	1.67	95	1.48
Det. & Mack.	293.69	45,785	156	127	5.2	4.2	75.2	0.41	24.8	0.71	0.49	76	7.90
D. & T. Shore Line	151.58	12,427	82	108	2.7	3.5	...	...	99.9*	1.80	1.80	147	4.00
Erie (incl. C. & E.)	4,905.11	404,503	82	91	2.8	3.1	...†	1.21	100	1.50	1.50	124	2.14
G. T. W.	1,947.92	280,790	144	152	4.6	4.8	...†	0.93	100	1.60	1.60	230	6.56
L. & H. R.	120.70	10,898	90	61	3.4	2.3	...	...	99*	2.28	2.28	206	4.40
L. & N. E.	278.84	16,566	59	65	2.0	2.2	0.4	0.59	99.6	1.56	1.56	93	3.78
L. V.	2,755.10	128,044	46	49	1.6	1.7	...	...	100	1.36	1.36	63	1.26
Monongahela	241.91	25,052	104	157	3.6	5.4	...	...	100	1.73	1.73	179	5.83
Montour	77.76	6,871	88	100	3.2	3.6	14.4	0.96	85.6	2.21	2.03	179	5.50
N. J. & N. Y.	56.49	2,499	44	65	1.5	2.2	...	...	100	1.52	1.52	67	2.13
N. Y. C.	22,081.04	1,829,288	83	81	2.7	2.7	0.2	2.18	98.9*	1.50	1.50	125	2.14
N. Y. C. & St. L.	2,522.01	235,856	94	94	3.0	3.0	...	...	100	1.57	1.57	147	2.42
N. Y. O. & W.	887.03	37,836	43	60	1.5	2.1	...	...	100	1.48	1.48	63	2.37
N. Y. S. & W.	228.97	16,725	73	96	2.5	3.3	...	...	100	1.43	1.43	104	6.47
P. M.	2,832.98	432,838	153	143	5.1	4.8	...	...	100	1.70	1.70	259	8.05
P. & L. E.	931.67	30,010	32	45	1.1	1.5	0.8	1.22	99.2	1.97	1.96	63	1.89
Pitt. & Shaw.	121.69	27,198	224	279	8.0	10.2	51.6	1.17	48.4	1.71	1.43	320	32.31
P. & W. V.	198.25	52,453	265	250	9.1	8.6	36.1	1.28	63.6*	2.17	1.84	488	13.11
P. S. & N.	221.70	25,001	113	161	3.8	5.5	100	0.99	...	...	0.99	112	10.79
Wabash	3,199.98	488,923	153	144	4.9	4.6	...†	1.14	100	1.42	1.42	216	3.94
CENTRAL EASTERN REGION													
A. C. & Y.	213.49	35,190	165	227	5.7	7.9	44.4	1.09	55.6	1.08	1.08	179	9.68
B. & O.	10,674.39	696,590	65	93	2.3	3.3	0.3	0.84	99.7	1.57	1.57	103	2.02
B. & L. E.	494.13	104,962	212	244	6.9	7.9	0.2	0.80	99.6*	2.20	2.20	467	11.28
C. of N. J.	1,490.75	59,957	40	49	1.4	1.7	...	...	100	1.68	1.68	68	1.39
C. & E. I.	1,423.79	158,075	111	97	3.6	3.1	...	...	100	1.20	1.20	134	3.45
C. & I. M.	165.13	12,503	76	94	2.5	3.1	...	...	100	1.77	1.77	134	2.60
C. I. & L.	820.76	149,852	183	107	6.0	3.5	2.3	0.76	95.6*	1.14	1.13	206	5.30
D. T. & I.	610.55	66,911	110	134	3.8	4.6	5	0.59	95	1.35	1.31	143	7.17
E. J. & E.	860.03	84,120	98	173	3.1	5.5	...	...	98.4*	1.68	1.68	164	6.57
Ill. Term.	649.18	54,285	84	85	2.8	2.9	28.5	0.88	65.4*	1.25	1.14	95	4.85
Long Island	822.66	49,236	60	65	2.0	2.2	...	...	100	1.88	1.88	113	1.41
Missouri-Ill.	239.62	66,761	279	344	8.9	11.0	54.6	0.75	45.4	1.31	1.01	280	33.51
Penna.	21,410.80	1,294,300	60	73	2.2	2.6	0.2	0.61	99.8	1.54	1.53	93	1.44
P.-R. Seashore Lines	663.02	50,095	76	57	2.8	2.1	...	...	100	2.26	2.26	171	7.27
Reading	3,046.24	84,951	28	36	1.0	1.3	...†	...	100	1.74	1.74	48	1.08
S. I. Rap. Tran.	90.87	4,685	52	57	1.9	2.1	...	...	100	0.94	0.94	49	1.07
W. M.	1,189.61	152,740	128	194	4.5	6.7	22.6	1.01	77.4	1.62	1.48	190	4.87
W. & L. E.	844.46	76,215	90	161	3.0	5.3	0.2	1.17	77.4*	1.36	1.36	122	3.65
POCAHONTAS REGION													
C. & O.	5,102.38	435,734	85	82	2.8	2.7	0.5	0.61	99.5	1.22	1.22	104	1.25
N. & W.	4,309.65	95,075	22	58	0.7	1.9	...	...	72*	1.22	1.22	27	0.38
R. F. & P.	374.75	100,447	268	302	9.4	10.6	...†	1.12	100	1.63	1.63	437	4.71
Virginian	869.94	155,036	178	209	5.7	6.7	...†	0.82	99.8*	1.47	1.47	262	3.42

Statistics of Crosstie Renewals on Leading Railroads in the United States and Canada for the Calendar Year Ending December 31, 1938—Continued

Road	Miles of maintained track occupied by wooden crossties	Total number of wooden crossties renewed in 1938	Number of wooden crosstie renewals per mile of maintained track		Per-cent of wooden crosstie renewals to all ties in tracks		Wooden ties untreated (U)		Wooden ties treated (T)		Weighted average cost per wooden crosstie	Cost of wooden crosstie renewals per mile of maintained track	Cost of wooden crosstie renewals per thousand equated gross ton-miles (cents)
			1938	5-year average	1938	5-year average	Per cent applied	Average cost‡	Per cent applied	Average cost‡			
SOUTHERN REGION													
A. G. S.	548.70	81,924	149	215	4.8	7.0	5.3	$1.13	94.7	$1.46	$1.44	$215	4.36
A. & W. P.	141.51	22,985	162	163	5.3	5.3	53.4	1.23	46.6	0.68	0.97	158	4.79
W. R. of Ala.	181.81	31,787	175	148	5.8	4.9	74.4	1.24	25.6	0.90	1.15	201	...
A. B. & C.	798.05	120,325	151	165	5.2	5.7	44.7	0.76	55.3	1.15	0.98	148	7.34
A. C. L.	6,848.81	882,845	129	136	4.4	4.7	57.9	0.84	42.1	1.26	1.02	131	4.38
C. of Ga.	2,349.68	341,197	145	130	4.9	4.6	5.6	0.96	94.4	1.03	1.03	149	5.15
C. & W. C.	427.22	62,186	146	163	5.0	5.6	100	1.09	...	...	1.09	159	9.04
C. N. O. & T. P.	772.90	66,622	86	128	2.8	4.1	...	...	100	1.65	1.65	142	1.73
Clinchfield	395.75	99,919	252	298	8.3	9.8	53.2	0.71	46.8	1.43	1.04	263	4.67
Col. & Green.	202.49	41,108	203	225	6.4	7.1	44.7	0.63	55.3	1.30	1.00	203	11.25
F. E. C.	1,348.19	180,697	134	145	4.7	5.1	100	0.89	...	...	0.89	119	3.89
Georgia	431.44	69,655	161	132	5.3	4.3	94.3	1.20	5.7	1.79	1.23	199	6.31
G. & F.	452.45	82,109	181	252	6.7	9.3	100	0.64	...	...	0.64	116	12.57
G. S. & F.	471.46	36,332	77	85	2.5	2.7	100	1.03	...	...	1.03	80	3.19
G. & S. I.	309.58	59,979	194	167	6.3	5.5	...†	0.56	98.7*	1.04	1.04	202	15.02
G. M. & N.	940.00	241,484	257	228	8.1	7.2	12.7	0.65	83.5*	1.13	1.07	274	11.66
I. C.	7,779.15	1,143,022	147	140	4.8	4.6	6.3	0.73	93.6*	1.09	1.06	156	3.44
Y. & M. V.	2,123.12	360,779	170	148	5.6	4.8	38.6	0.79	61.4	1.03	0.94	159	...
L. & N.	6,919.45	778,759	113	111	3.9	3.9	5.1	1.11	94.9	1.36	1.35	152	3.17
Miss. Cen.	168.10	37,157	221	262	7.0	8.3	12	0.52	88	1.05	0.98	218	17.49
M. & O.	1,197.20	358,066	299	307	9.4	9.7	77.6	0.70	22.4	1.08	0.78	234	5.57
N. C. & St. L.	1,529.13	166,766	109	131	4.0	4.5	...	...	100	1.37	1.37	149	4.13
N. O. & N. E.	281.34	32,521	116	148	3.7	4.7	2.4	0.86	97.6	1.45	1.43	165	3.75
Nor. Sou.	960.63	268,368	279	335	9.1	11.5	100	0.69	...	...	0.69	192	14.30
Nor. Ala.	119.81	47,152	394	382	12.6	12.2	42.9	0.71	57.1	1.69	1.27	501	32.58
S. A. L.	5,370.35	1,006,940	187	214	6.2	7.3	47.4	0.93	52.6	1.13	1.04	194	5.68
Southern	8,667.91	1,772,917	205	252	6.5	8.0	48.9	1.06	51.1	1.53	1.30	266	6.46
Tenn. Cen.	337.19	67,332	200	272	6.6	8.9	100	0.72	...	...	0.72	143	7.05
NORTHWESTERN REGION													
C. & N. W.	12,112.78	1,677,931	139	133	4.7	4.5	3.9	0.58	96.1	1.05	1.03	143	5.07
C. G. W.	1,897.56	298,664	157	169	5.3	5.8	45.8	1.02	54.2	1.49	1.27	200	4.66
C. M. St. P. & P.	13,898.21	1,732,668	125	180	4.1	6.0	42.2	0.51	57.8	1.37	1.00	125	4.12
C. St. P. M. & O.	2,227.12	404,467	182	170	6.1	5.7	18.6	0.69	81.4	1.11	1.03	187	6.36
D. M. & I. R.	1,096.66	69,094	63	75	2.1	2.5	38.7	0.85	61.3	1.59	1.30	82	5.47
D. S. S. & A.	531.52	102,509	193	205	6.8	7.2	100	0.61	...	...	0.61	118	10.24
D. W. & P.	210.66	67,457	320	349	10.7	11.6	83.1	0.58	16.9	1.54	0.74	238	12.83
G. N.	9,891.41	1,046,907	106	111	3.4	3.5	1.9	0.48	92.9*	1.26	1.24	132	4.20
G. B. & W.	284.99	91,306	320	374	11.1	13.1	73.7	0.75	26.3	1.62	0.98	314	19.92
L. S. & I.	234.75	39,346	168	194	5.6	6.5	94	0.61	6	1.73	0.68	114	27.40
M. & St. L.	1,684.27	332,899	198	169	6.5	5.6	61	0.79	39	1.28	0.98	193	11.14
M. St. P. & S. S. M.	4,981.69	802,309	161	169	5.5	5.8	74.5	0.58	25.5	1.28	0.76	122	6.43
N. P.	9,073.52	1,157,798	128	110	4.4	3.8	2.1	0.53	97.9	1.14	1.13	144	5.29
Spokane International	194.42	64,001	329	331	11.6	11.7	100	0.46	...†	1.71	0.46	150	13.58
S. P. & S.	1,088.69	257,654	237	170	7.3	5.5	57.2	0.59	42.8	1.46	0.96	228	8.51
CENTRAL WESTERN REGION													
Alton	1,513.00	375,664	248	246	8.2	8.1	61.3	1.11	38*	1.91	1.42	352	8.45
A. T. & S. F.	19,435.85	1,641,873	84	107	2.8	3.5	...†	1.22	100	1.20	1.20	102	2.73
C. B. & Q.	12,319.99	1,881,442	153	130	4.9	4.2	...	...	97.3*	1.31	1.31	201	5.80
C. R. I. & P.	9,207.55	1,111,854	121	96	4.1	3.2	...†	0.59	100	1.03	1.03	124	3.40
C. R. I. & G.	756.72	62,058	82	78	2.7	2.5	...	...	94*	1.06	1.06	87	...
C. & S.	902.45	70,142	78	113	2.6	3.7	4.8	0.42	78.2*	1.23	1.19	92	3.29
D. & R. G. W.	3,318.09	269,208	81	134	2.6	4.3	0.8	0.27	56.1*	1.16	1.15	93	2.99
D. & S. L.	312.76	13,067	42	282	1.4	9.2	...	...	100	1.45	1.45	60	2.77
F. W. & D. C.	955.24	90,243	94	62	3.1	2.0	0.2	0.14	95*	1.12	1.12	106	3.38
Nev. Nor.	190.48	30,887	162	139	5.6	4.8	100	0.88	...	...	0.88	143	24.83
Northwestern Pac.	459.05	47,727	104	101	3.6	3.5	100	0.80	...	...	0.80	84	4.35
S. P.	12,362.83	1,225,522	99	79	3.3	2.7	11.7	0.73	88.3	1.21	1.15	114	2.14
T. P. & W.	275.86	98,181	356	304	11.2	9.6	0.8	0.57	99.2	1.43	1.42	505	21.27
U. P.	13,145.47	1,969,781	150	150	5.3	6.1	1.2	0.62	98.8	1.14	1.14	170	2.90
Utah	85.00	8,265	97	190	3.6	7.3	38	0.70	53.7*	2.18	1.57	153	7.24
W. P.	1,486.14	361,420	243	313	8.2	10.6	51	0.81	49	1.52	1.16	282	5.67
SOUTHWESTERN REGION													
B.-R. I.	213.55	12,627	59	63	1.9	2.0	...	...	100	0.91	0.91	54	2.08
G. C. L.:													
B. S. L. & W.	139.74	14,503	104	99	3.5	3.3	...	...	100	1.07	1.07	111	...
N. O. T. & M.	227.07	49,234	217	144	7.1	4.7	8	0.56	92	1.07	1.03	224	4.64
St. L. B. & M.	753.69	86,668	115	84	3.8	2.8	...	...	100	1.02	1.02	117	...
S. A. U. & G.	360.71	59,315	164	110	5.7	3.8	...	...	100	1.10	1.10	180	...
I.-G. N.	1,487.46	156,736	105	108	3.5	3.6	...	...	100	0.99	0.99	105	2.89
K. C. S.	1,256.91	172,677	137	119	4.3	3.8	...	...	100	1.04	1.04	143	3.93
K. O. & G.	356.84	61,402	172	212	5.7	6.9	0.7	0.60	99.3	1.06	1.06	182	7.82
L. & A.	718.83	161,195	224	223	7.1	7.1	21.3	0.59	78.7	0.84	0.79	177	6.83
L. A. & T.	245.30	102,539	418	391	13.8	12.8	77.4	0.57	22.6	0.90	0.64	268	17.64
M. V.	386.61	35,613	92	101	3.1	3.3	1.1	0.50	98.9	1.01	1.01	93	9.93
Miss. & Ark.	356.86	123,414	346	347	11.1	11.1	100	0.42	...	...	0.42	145	15.64
M-K-T.	4,096.49	405,764	99	117	3.1	3.7	2.2	0.79	97.8	1.07	1.06	105	3.29
M. P.	9,028.02	1,547,646	171	193	5.5	6.2	7.5	0.54	92.5	1.12	1.08	185	4.33
O. C-A-A.	143.36	34,793	243	187	8.1	6.2	91.2	0.55	8.8	1.21	0.61	147	28.23
St. L.-S. F.	6,492.44	1,170,432	180	200	5.7	6.3	9.5	0.67	90.5	1.10	1.06	192	6.49
St. L. S. F. & T.	258.09	39,314	152	278	4.8	8.8	23.7	0.68	76.3	1.07	0.95	145	8.28
St. L. S. W.	1,925.89	305,150	158	133	5.0	4.2	...	...	94.5*	1.11	1.11	177	4.51
T. & N. O.	5,633.80	748,426	133	115	4.8	4.2	...†	0.98	100	0.97	0.97	129	4.29
T. & P.	2,477.34	231,943	94	91	3.2	3.1	...	0.38	100	1.03	1.03	97	2.09
Tex. Mex.	205.58	27,753	135	198	4.3	6.8	0.2	0.25	99.8	1.16	1.16	156	16.84
CANADIAN ROADS													
C. P. R.	20,565.00	3,559,081	170	164	5.9	5.8	53	0.52	47	1.23	0.86	146	6.00
C. N. R.	27,041	5,797,181	214	218	7.3	7.7	70	0.60	30	1.28	0.80	172	7.60
T. & N. O.	534.10	136,769	251	234	8.8	8.3	99.8	0.72	0.2	1.89	0.72	180	6.60

* Owing to the fact that the total number of ties inserted on some roads included some second-hand ties, ties other than wood, tie blocks, etc., the percentages of treated and untreated ties do not total 100 per cent in all cases.

‡ These are storekeepers' average costs of ties charged out and used. They are not the actual costs or the prices paid for ties purchased during the period.

† Proportion is less than 0.1 per cent.

NOTE: Statement applies to Class I roads and includes consolidated data for Class I roads merged during the period 1934 to 1938, as follows:
Atchison, Topeka & Santa Fe—includes Panhandle & Santa Fe; Gulf, Colorado & Santa Fe; and Fort Worth & Rio Grande.
Kansas City Southern—includes Texarkana & Fort Smith.
Union Pacific—includes Los Angeles & Salt Lake; Oregon-Washington R. R. & Nav. Co.; Oregon Short Line; and St. Joseph & Grand Island.
Canadian Pacific—includes all lines.

of 136 Class I roads of the United States, as well as the Canadian Pacific and the Temiskaming & Northern Ontario in Canada.

In general, the number of ties renewed per mile of maintained track, with the exceptions to be noted, did not vary widely from 1937. Among the noteworthy changes were the Pittsburgh & Lake Erie, 71-32; the Wheeling & Lake Erie, 211-90; the Mississippi Central, 376-221; The Pittsburg & Shawmut, 348-224; the Duluth, Missabe & Iron Range, 120-63; the Atchison, Topeka & Santa Fe, 125-84; the Baltimore & Ohio, 118-65; the Denver & Rio Grande Western, 137-81; the Denver & Salt Lake, 395-42; the Western Pacific, 393-243; the Pennsylvania, 105-60; the Spokane, Portland & Seattle, 173-237; and the Chicago, Indianapolis & Louisville, 96-183, the 1937 figures being given first.

For the roads as a whole there was no marked change in the ratio of treated to untreated ties. However, there were appreciable changes on a few individual roads, those decreasing the ratio of untreated ties to the whole number applied, compared with 1937, including the Chicago, Indianapolis & Louisville, 15.7 to 2.3; the Richmond, Fredericksburg & Potomac, 30.4 to none; the Virginian, 56.7 to none; the Atlantic Coast Line, 95.8 to 57.9; and the Colorado & Southern, 15.4 to 0.8. Among the roads that increased the ratio of untreated ties to the whole number applied were the Akron, Canton & Youngstown, from 44.4 to 100; and the Illinois Terminal, 4.1 to 28.5.

Further analysis on the tie renewal statistics reveals that in 1938 treated ties were applied exclusively on 36 roads, and that on 44 roads more than 80 per cent of the ties used were treated. On many of the latter all new ties inserted were treated, the remainder being second-hand ties salvaged from abandoned tracks. Only 12 roads used no treated ties; on 5 the treated ties applied ranged from negligible to 20 per cent; 8 inserted from 20 to 40 per cent; on 21 roads treated ties represented from 40 to 60 per cent; and on 12 roads the percentage ranged from 60 to 80.

The tabulation includes a column for the five-year average renewals for each road, which reveals that the roads, excluding the shorter lines, having the lowest five-year averages per mile of track were the Reading, 36; the Pittsburgh & Lake Erie, 45; the Central of New Jersey, 49; the Lehigh Valley, 49; the Norfolk & Western, 58; the New York, New Haven & Hartford, 73; the New York Central, 81; and the Chesapeake & Ohio, 82.

Three measures of tie renewal policies are shown in the last three columns of the table. One of these gives the average cost of wooden crossties; another gives the cost of tie renewals per mile of maintained track; and the final column gives the cost of wooden crossties per thousand equated gross-ton miles.

New Santa Fe Bus Terminal

A NEW bus terminal, to serve the various bus routes of the Santa Fe Trail Transportation Company as well as the Los Angeles-San Francisco coordinated bus-train schedules, was opened in downtown Los Angeles on February 1. The new terminal is fully air-conditioned, and its interior is unusually decorated in the modern manner. The marble columns and white walls are topped with a bright red ceiling, while the face of the restaurant section, the counter tops and the leather upholstery of the chairs are bright blue.

A spacious loading zone for passengers is situated at the south end of the building. The other features include a public address system for announcing bus arrivals and departures, a lunch counter and restaurant, a travel and tour department, and ticket counter facilities for both rail and bus departments. In addition to the Santa Fe buses the terminal serves as the western terminus of the Burlington Transportation Company's transcontinental runs. It is also used by the Airline Bus Co. and handles a total of 44 incoming and outgoing bus schedules daily.

Both Railway and Bus Tickets Are Sold

A Striking Color Scheme Features the Interior of the Terminal

Communications . . .

The Railway Age cannot publish letters from readers who do not supply their names and addresses. Names of correspondents are not published, or disclosed even upon inquiry, unless the correspondent consents. But they must be given us as an evidence of good faith.

If Public Demands Beauty in Bridges—It Should Pay

PHILADELPHIA, PA.

TO THE EDITOR:

Your editorial on More Attractive Bridge Structures in your issue of May 27, proved very interesting. While the railroads and everyone else have much more weighty problems before them these days, various bridges and other structures must be built, and it is gratifying to see that, as time goes on, more attention is being given to their appearance.

Nearly always good appearance costs something, and, under present conditions, it is hardly fair to charge the railroads more heavily for this solely to satisfy the esthetic tastes of their neighbors. The growing tendency to change the division of costs for highway-railroad grade separations to one based on the benefits to be derived by the parties involved may throw this charge for appearance where it belongs—on the community in general.

For a year or more I have been greatly impressed in this regard by a particular instance, where some means should have been found to charge the state or county with a proper share of the cost. This is at the point where the New York and Long Branch crosses the Shark river on a long fill and trestle, with a draw span. The increased use of the river above the bridge brought about a demand for a wider channel and bridge opening, and the railroad, compelled to do this work at its own expense, installed a rolling-lift bascule span as being the least costly. Such structures are always distressing eyesores, and the one here is particularly so as the railroad line adjoins a new concrete highway bridge of very good appearance, and is less than 200 yards upstream from another recently built concrete highway bridge, which won a prize for good appearance in bridges of its class.

This is a case where I think the state or county authorities which built these other bridges should have borne a fair share of the expense to make the railroad crossing equally attractive in appearance. The railroad could not be expected to spend one dollar more than was necessary for a structure of strict utility.

HENRY PAUL BUSCH

R. R.'s Should Reduce Rates, Abandon Profitless Services

MINERAL CITY, OHIO.

TO THE EDITOR:

Some one in your organization was kind enough to send me a reprint from your July 8 issue of the *Railway Age*, title, "The Parade to Moscow." This is one of the best pieces I have read recently and it should have wide circulation. For months now I have been emphasizing the fact that many so-called "conservative" business men are supporting the socialistic philosophy of Adolf Berle. However sharply I have criticized the railroads for their extortionate rates on farm products and low-priced heavy industrial products, I realize what we are faced with.

I think earlier railroad leadership was terribly stupid and the United States Chamber of Commerce helped the railroads a lot in getting into the position they are, but, even so, the trend toward state socialism is so much more serious than any other public question now before us that we must stop it.

I do not believe any organ is better fitted to help than you are—but one of the things you are overlooking is suggesting to railroad management that their rates on much tonnage as above referred to are 30 per cent to 40 per cent too high. The trouble with the argument that trucks are being subsidized is that people think of the railroads' objection to this as merely a means to sustain outrageously high rates which really stopped freight commerce before the advent of the truck.

If we want a return to private enterprise we must adopt a policy that will first begin to move a much larger volume of freight. The railroads must secure the sympathy and support of the farmers and heavy industrialists. The railroads, by themselves, can stop the socialistic trend, but not by thinking the people will save them; they must and can lead us out of this wilderness by aggressively accepting the responsibility of their own private business.

I enclose a circular which illustrates my point. I think the railroad administration from 1930 to 1935 is more responsible for the Moscow trend than any other minority in this country. These men have been our dumbest business men.

Will you write an editorial discussing the point I make in this letter? This is no time for unkindness or bitterness or babyishness such as has been displayed by railroad management over a long period. Our country is in a hell of a fix and we must all get our shoulders to the wheel to restore private enterprise.

CLOYD W. MILLER,
President, Hickory Clay Products Co.

Mr. Miller's Enclosure:

THE DEAD HORSE PHILOSOPHY OF THE RAILROADS

"The railroads are charging excess freight rates over costs which include 5¾ per cent profit of capital investment on heavy industrial and farm products to pay the deficits of passenger trade.

"Below shows what it costs to move hollow building tile from Mineral City, Ohio, to a few cities, what is charged, and excess per ton to go into the Dead Horse Kitty of lost passenger trade:

TO	Mileage	*Freight costs per ton incl. 5¾% profit	Freight actually charged per ton	Dead Horse Kitty per ton
Pittsburgh	103	$1.49	$2.15	$ .66
Toledo	174	1.85	2.20	.35
Detroit	230	2.08	2.53	.45
Ft. Wayne	235	2.08	2.75	.67
Rochester	323	2.49	3.30	.81
Harrisburg	348	2.62	4.51	1.89
Baltimore	432	3.02	4.51	1.49
Syracuse	404	2.85	3.85	1.00
Philadelphia	452	3.12	4.73	1.61
New York	542	3.52	5.17	1.65
Stamford, Conn.	589	3.70	5.61	1.91
Boston	751	4.42	5.61	1.19
Springfield, Mass.	653	3.98	5.61	1.63
Utica, N. Y.	457	3.12	4.29	1.17

*I. C. C. statement No. 3681 (File No. 28-A-12) *a remarkable cost study.* Hollow tile averages 36.78 tons per car.

These figures show how railroad management conducts business—it started to lose passenger business 15 years ago partly by transportation evolution but largely by rates at 3.6 cents per mile. Finding passenger business declining they have tried to make up passenger losses out of increased freight charges, or failing to restore pre-war freight rates—the result of this stupidity has almost ruined the railroads and the country as well.

Our markets to eastern seaboard have been taken from us. The Dead Horse Kitty shows the reason. Can you imagine charging long-haul tonnage 45 per cent to 70 per cent over a cost which includes 5¾ per cent capital gain? The result is no freight movement, completely lost markets.

Would the village clothier who had a stock of outmoded 1900 era suits jeopardize his up-to-date clothing trade by 50 per cent extra mark-up to cover losses on stuff which the public no longer wanted, or would he toss out the deadwood and keep his good trade?

"All Shippers: You can easily check what you are contributing to the Dead Horse Kitty by requesting from I. C. C., Washington, D. C., Document No. 3681 file No. 26-A-12."

NEWS

Roads Rush Wheat Crop Sans Hitch

Handle large winter wheat crop without car shortage or delay; Record yield at points

The handling of winter wheat to market, the major agricultural movement of the year, has again been accomplished by the railroads without car shortage, delay or transportation difficulty according to reports received by the Association of American Railroads from the various rail carriers.

Although this year's crop on the whole was smaller than last year, the volume handled by some of the important Southwestern markets exceeded all previous records, the A. A. R. statement said. Car supply problems were affected by an unexpectedly heavy increase in production in Texas and western Oklahoma, due to exceptionally favorable weather just before harvest, and to a heavy volume of the crop seeking immediate storage under the Government loan program which rapidly exhausted facilities at markets in the early wheat territory.

Previous records of grain receipts for a single day, for a week and for the whole season of active movement, and for the unloading of grain into elevators, were broken in whole or in part at Enid, Amarillo and Fort Worth. At the other markets, including primary and secondary terminals, receipts and unloadings were heavy during the flush movement, but no new records were established.

The railroads attribute much of the success attending this season's movement to the cooperation of grain dealers and handlers at country points and terminals in prompt loading, unloading and reconsigning of cars, particularly where this was accomplished in advance of the expiration of the time allowed industries under the demurrage rules for this service. Terminal handling of grain cars is aided by the activities of committees of grain dealers and railroad representatives appointed by the Southwest, the Trans-Missouri-Kansas and the Central Western Shippers Advisory Boards. The Oklahoma Corporation Commission and the railroad commissions of other states also participated helpfully. No complaints of inadequate car supply or transportation service were received although, at the peak of the movement, tight situations existed at a few local spots. There the difficulties were due chiefly to a flow of grain from combine harvesters in excess of the ability of the country elevators to handle through from farmers' trucks to cars.

By the middle of August the flow of spring wheat to market will be in full swing, the area of principal production being Minnesota, the Dakotas and Montana. An exceptionally heavy crop is coming to harvest over the line in the western provinces of Canada. However, the A. A. R. anticipates no difficulty in protecting the transportation requirements of those crops.

Beginning on September 1 a large proportion of the 257 million bushels of old corn now on farms sealed under Government loans is expected to be moved to country stations for further storage or transportation. This traffic, together with the normal seasonal movement of new crop oats, barley and other small grains and a rising tide of general industrial traffic, "will afford the railroads an opportunity again to demonstrate their ability to protect volume transportation requirements."

O. & W. Leaves A. A. R.

The New York, Ontario & Western has withdrawn from complete membership in the Association of American Railroads, effective September 1. Regarded chiefly as an economy measure of a smaller Class I road whose problems differ in great part from those of the association's leading members, the O. & W.'s move is the first instance of such withdrawal since formation of the A. A. R. in 1934. While leaving the ranks of full membership the road will become a limited participant in the more applicable divisions of the association, as is the case with a number of smaller Class I carriers who have been so related since its founding.

Chicago, Aurora & Elgin Not Exempt from Pension Laws

The Interstate Commerce Commission, Division 3, has found that the Chicago, Aurora & Elgin is an employer under the terms of the Railroad Retirement Act and Carriers Taxing Act, since it does not fall within those acts' exemption provisos applicable to street, interurban or suburban electric railways which are not operating as a part of a general steam-railway system of transportation. Commissioner Mahaffie, concurring in part, said that he concurred in the result but did not agree "with a part of the reasoning by which the majority reach the conclusion."

No Cheap Trucks for Forwarders

I. C. C. insists they be charged same as all other shippers—Eastman hints at way out

Freight forwarding companies cannot lawfully enter into joint-rate arrangements with motor carriers, but must pay the regularly-published tariff rates of the common carrier whose services they utilize, according to an Interstate Commerce Commission decision embraced in a supplemental report in No. MC-2200, Acme Fast Freight, Incorporated, et al., Common Carrier Application. The main issue in the proceeding was disposed of a little over a year ago when the commission, as noted in the *Railway Age* of July 23, 1938, denied the Acme application, holding that forwarding agencies are neither common carrier by motor vehicle nor brokers subject to the Motor Carrier Act.

In that decision of last year the commission discussed arrangements between Acme and motor carriers, giving its then "present view" as one holding that shipments of forwarders, who under the present set-up must approach transportation agencies in the role of shippers, "are not shipments which can lawfully be transported by a motor contract carrier." Acme's arrangements with the motor carriers had since April 1, 1936, been set forth in tariffs filed with the commission, naming the rates applicable on all traffic handled by Acme, regardless of the type or types of transportation utilized; concurrences in these tariffs had been obtained from the majority of the interested motor carriers. The present phase of the case arose when the commission directed Acme and the participating motor carriers to show cause before June 1 why the commission should not strike the tariffs from its files—in view of its above-mentioned decision on the Acme application and its subsequent finding in the Freight Forwarding Investigation that forwarders are not express companies subject to Part I of the Interstate Commerce Act.

Discussing the tariffs at issue the commission refers to evidence indicating that when the forwarders ship by railroad they are required to pay the railroads "applicable published rates;" whereas the "divisions" accorded the participating motor carriers "are different from or lower than the rates chargeable to other shippers for like and contemporaneous transportation." "Indeed," the report goes on, "it appears that this is one of the principal reasons

why the tariffs in question are filed here—to enable the applicants as shippers to obtain special rates lower than other shippers must pay for similar transportation. This is expressly forbidden by the statute."

Previously the commission had described the charges set forth in the tariffs as being "in no proper sense 'joint rates'," adding later on that "forwarding companies such as applicants, which do not perform transportation, and therefore cannot in any real sense establish joint rates with the actual transporters, may not lawfully obtain transportation at divisions of what are called joint rates between the forwarders and the carriers. . . . We adhere to the views expressed in our prior report . . . and . . . hold that the act prohibits joint rates between motor carriers subject to the act and forwarding companies such as applicants which do not conduct motor vehicle operations . . . We find that . . . such tariffs are void and their use is unlawful, and that they should be rejected and stricken from our files."

Chairman Eastman, concurring, agreed with the results reached by the majority report, but not with all that was said therein. A forwarding company of the type under consideration, he went on, "is by no means a 'parasite', as some have contended, but performs a service useful not only to those who have small lots of merchandise to ship but also to the carriers whose services it utilizes." As the former co-ordinator views it, the forwarder bears a "very close resemblance to an express company;" although "a distinction in practice is the curious one that the most important, if not the only, express company now functioning, the Railway Express Agency, Inc., is not obliged to pay published rates to the railroad companies whose services it utilizes, but compensates them under a special contract which results in a variable, but always low, payment for the services rendered."

After further talk of what he regards as benefits resulting from the forwarding method of handling freight, Mr. Eastman notes his agreement with the majority view that the forwarder must pay the published rates of carriers whose services it utilizes—"unless and until it is authorized, like the analogous Railway Express Agency, to enter into a special contract for such service." Also, in noting his agreement with the majority report's conclusion that the forwarder must pay the same rates as other shippers must pay "for similar transportation," the chairman emphasizes the words "similar transportation;" and he goes on to express the view that transportation performed by common carriers for forwarders "is not necessarily similar to the transportation performed on local shipments of the same commodities between the same points, and usually it is dissimilar." Where "such dissimilarity" can be established, Mr. Eastman adds, "a difference in rates can be justified and is lawful. The underlying reason is much the same as in the case of the special arrangements for compensation which are accorded to both the Railway Express Agency and the Parcel Post." Mr. Eastman was authorized to say that Commissioner Mahaffie joined in his expression.

Probe of Motor Classifications

Motor freight classifications will be investigated by the Interstate Commerce Commission in a proceeding instituted on July 29, the same day on which the commission entered orders launching its general investigations of class rates and freight classifications of rail and water carriers subject to the Interstate Commerce Act. The July 29 order in the motor classifications proceeding was not made public until August 9, while those in the above-mentioned proceedings involving rail class rates and classifications were made public on August 1, as noted in the *Railway Age* of August 5, page 218.

Docketed as No. MC-C 150, Motor Freight Classifications, the proceeding will have as respondents "all common carriers of property by motor vehicle subject to the Motor Carrier Act, 1935." The order sets no date for hearings which will be held "at such times and places as the commission may hereafter direct."

Passenger Officers to Meet October 26-28

The executive committee of the American Association of Passenger Traffic Officers announces that the association will hold its 1939 meeting at the Arlington hotel, Hot Springs, Ark., October 26 to 28, inclusive.

Export Grain Rates Suspended

The Interstate Commerce Commission has suspended from August 10, until March 10, 1940, the operation of schedules proposed by the Illinois Central to reduce the export rates on grain, in carloads, from points in Illinois territory, on the I. C., to New Orleans, La., and Gulfport, Miss.

R. C. C. Distribution

The Railroad Credit Corporation on August 15 will make a liquidating distribution amounting to $367,556.96 or one half of one per cent of the fund which it administers. Of the foregoing total $308,133.35 will be paid in cash and $59,423.61 will be credited on carriers' indebtedness to the corporation.

This August 15 distribution will bring the total amount distributed to $57,706,441.49 or 78 per cent of the original fund, $30,279,326.28 having been returned in cash and $27,427,115.21 in credits.

Idaho Intrastate Rates

Increases in freight rates allowed in the Ex Parte 123 decision may, with certain exceptions, be applied to intrastate traffic in Idaho, according to an Interstate Commerce Commission decision made public this week. The decision finds that the refusal of the Public Utilities Commission of Idaho to permit the adjustments resulted in unjust discrimination against interstate traffic.

Exceptions are the rates between specified Idaho points on merchandise l. c. l.; fresh fruit l. c. l.; sugar; sand; dried peas; ice; cheese, l. c. l.; molasses sugar beets; beet-sugar final molasses; and limerock. Commissioner Aitchison dissented, Commissioner Alldredge dissented in part and Commissioner Splawn did not participate in the disposition of the proceeding.

Freight Car Loading

Loading of revenue freight for the week ended August 5 totaled 661,136 cars, the Association of American Railroads announced on August 10. This was an increase of 1,372 cars, or two-tenths of one per cent, above the preceding week an increase of 77,074 cars, or 13.2 per cent, above the corresponding week last year, but a decrease of 105,046 cars, or 13.7 per cent, below the comparable 1937 week.

As reported in last week's issue, the loadings for the previous week ended July 29 totaled 659,764 cars, and the summary for that week, as compiled by the Car Service Division, A. A. R., follows:

Revenue Freight Car Loadings

For Week Ended Saturday, July 29

Districts	1939	1938	1937
Eastern	132,759	125,228	158,385
Allegheny	129,615	106,841	158,857
Pocahontas	52,469	40,415	53,737
Southern	93,626	84,979	102,219
Northwestern	105,198	84,683	131,451
Central Western	100,960	100,611	117,372
Southwestern	45,137	45,940	57,070
Total Western Districts	251,295	231,234	305,893
Total All Roads	659,764	588,697	779,091
Commodities			
Grain and Grain Products	40,822	50,706	51,255
Live Stock	11,591	10,829	11,269
Coal	117,223	99,606	118,665
Coke	6,516	4,546	10,158
Forest Products	32,451	27,870	42,526
Ore	43,564	23,123	73,679
Merchandise, l.c.l.	152,324	147,928	166,975
Miscellaneous	255,273	224,089	304,564
July 29	659,764	588,697	779,091
July 22	656,341	580,818	767,470
July 15	673,812	602,445	766,384
July 8	559,109	500,981	678,958
July 1	665,528	588,880	802,346
Cumulative Total, 30 Weeks	17,892,148	16,503,573	22,032,078

In Canada.—Carloadings for the week ended July 29 totaled 45,588, as compared with 47,657 in the previous week and 43,742 last year, according to the weekly statement issued by the Dominion Bureau of Statistics.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada:		
July 29, 1939	45,588	19,422
July 22, 1939	47,657	19,608
July 15, 1939	48,448	19,521
July 30, 1938	43,742	18,523
Cumulative Totals for Canada:		
July 29, 1939	1,299,286	654,070
July 30, 1938	1,314,619	612,763
July 31, 1937	1,435,544	821,280

Morgan Railroad Specialist Dies at 82

Charles Steele, a partner of J. P. Morgan & Co., since 1900 and intimately concerned with important railroad reorganizations since 1880, died at Westbury, N. Y., on August 5 at the age of 82. In the Eighties he was connected with the reorganization of the New York, Lake Erie & Western (later the Erie) and in 1894,

at the request of C. H. Coster, Morgan's specialist in railroad reorganization, was retained in legal activities in connection with reorganization of the Southern from a number of hitherto disconnected roads. In 1900 he became a partner in J. P. Morgan & Co., succeeding Mr. Coster as the firm's specialist in railroad matters. During his career he served as director and in other capacities with numerous railroads, including the Atchison, Topeka & Santa Fe, the Southern and the Erie.

Greyhound Equipment Notes

Various units of the Greyhound system have been authorized by the Interstate Commerce Commission to issue serial equipment mortgage notes to finance purchases of new buses. Included are: Capitol Greyhound Lines, $66,000; Central Greyhound Lines, Inc., $110,400; Dixie Greyhound Lines, $132,000; New England Greyhound Lines, $109,000; Ohio Greyhound Lines, $105,600; Teche Lines, Inc., $79,200; Central Greyhound Lines of New York, $165,600. The latter will be guaranteed by Central Greyhound Lines, Inc., as authorized by the decision. The commission's report reveals that the financing is in connection with the purchase of 57 new buses.

In another decision Division 4 authorized New England Greyhound Lines to issue another $100,000 of equipment mortgage notes to finance in part the purchase of nine new buses.

Literary Fun Society Appears Unprepared in Rail Pageant

Edward Hungerford, director of the opera-pageant "Railroads on Parade" at the New York World's Fair, on August 2 acted as host to the "Wednesday Culture Club That Meets on Fridays," entertaining the members, mostly authors or artists, at luncheon in one of the modern Pullman cars fitted with removable sides for use in a scene of the show. On cue, and unknown to the members of the club, the car was drawn on to the stage in full view of a large audience, much to the surprise of the club members and the genuine amusement of the spectators. After the first wave of excitement had worn off, the group fell into the spirit of the occasion and acted their parts well until the car was drawn off into the wings.

Hearings in Forwarder Investigation

Hearings have been assigned by the Interstate Commerce Commission on those phases of the Freight Forwarding Investigation which were reopened upon petitions of the respondent railroads. As pointed out in previous issues of *Railway Age* the proceeding was reopened with respect to off line stop-off arrangements to partially unload and to complete loading, and the carrying forward of charges of forwarders as advances on outbound l. c. l. billing.

Examiners Trezise and Haden will conduct the hearings which will be held October 16, at the Hotel St. George, Brooklyn, N. Y.; October 30, Morrison Hotel, Chicago; November 6, Coronado Hotel, St. Louis, Mo.; November 10, Offices of the Colorado Public Utilities Commission, Denver, Colo.; November 16, Hotel Empire, San Francisco, Calif.; November 23, Baker Hotel, Dallas, Tex.; November 28, Biltmore Hotel, Atlanta, Ga.

B.R.T. Attacks "Capitalist Press" As in Sympathy with Rail Executives

The current issue of the B. R. T.'s "Railroad Trainman" carries several strong denouncements of the reporting the second quadrennial convention of the brotherhood in Cleveland, Ohio, received at the hands of the daily newspapers in that city. The leading editorial declares: "The Cleveland daily newspapers vied with each other in an effort to see which could uncover and print the most 'dirt' about the B. R. T. Clearly the intention was to embarrass the delegates and particularly A. F. Whitney, president of the brotherhood. So there originated in the Cleveland papers a constant stream of unholy propaganda which was promptly disseminated to every state in the union through the wire services which these capitalistic enterprises control."

This is not all, however. The editorial goes on to tie in with the alleged newspaper propaganda "the schemes of certain reactionary railroad executives." Labor leaders comprising the Railway Labor Executives Association (of which the B. R. T. is not a member) also come in for a lambasting in a statement that the aforesaid "reactionary" railroad executives "would have been aided in their current efforts to assault the Railway Labor Act had they been able to eliminate from the scene the man who is holding the fort for railroad labor while certain other labor chieftians are being coddled in 'Committees of Six'."

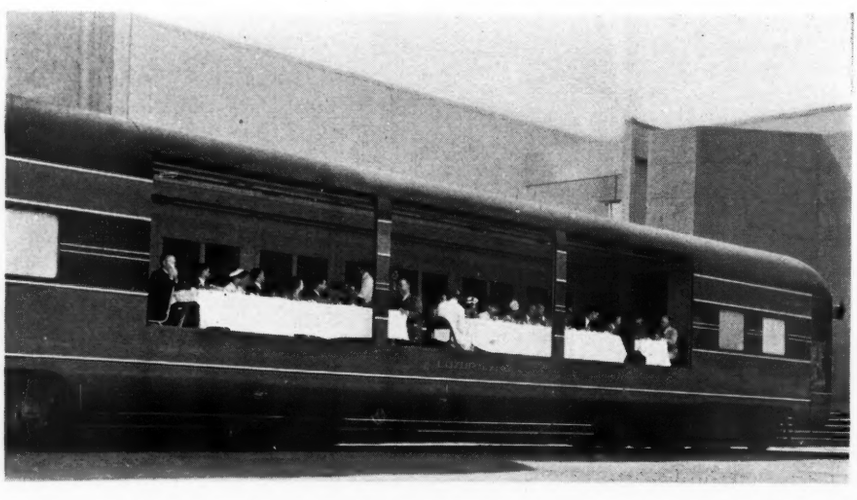
4,000-Gallon Road-Rail Milk Tank Demonstrated at N. Y. World's Fair

J. M. Davis, president of the Lackawanna and chairman of the Eastern Presidents' Conference, New York World's Fair committee, on August 5 demonstrated the transfer of a 4,000-gal. milk tank of 25 tons between a highway motor truck and a specially equipped railway flat car through push button control at the track exhibit area of the New York World's Fair. Designed by B. F. Fitch, president of Motor Terminals, Inc., New York, the tank and the transfer device, together with the necessary railway and highway equipment, will remain on exhibit at the fair. Two tanks of smaller capacity have been in daily operation on the New York, Ontario & Western between Weehawken, N. J., and Sherburne Four Corners, N. Y., for the past three years, which operation was reviewed in the *Railway Age* of August 27, 1938, page 322. The new exhibit tank is mounted longitudinally on both truck and car body, while the two smaller tanks noted above are mounted transversely.

Japan Forms Transport Firm to Run Roads in Conquered China

Details of the organization of the North China Transportation Company, which is to take over the operation of most public transportation facilities in North China territory under Japanese military occupation, have recently been made public. A subsidiary of the North China Development Company, established last April, the Transportation Company will take over railways and motor transport services formerly operated by Chinese companies before the territory was conquered by Japan and operated temporarily in the interim by the Japanese-owned South Manchuria Railway.

The North China Transportation Company, Ltd., will be a joint stock company authorized to engage in railroad, highway and inland water-way transport, together with subsidiary enterprises. Its capital is established at 300,000,000 yuan ($36,000,000), the amount of which may be increased with the approval of the government. Shareholders may purchase their shares with property other than money; decision as to the kind and value of this property will be reached at shareholders' meetings. The company is authorized to operate the former national railways and also to construct new railways and inaugurate new highway services. In this connection the company may, at its own expense, make use of government property which when acquired shall become the property of the company and may be mort-



Members of the Artistic Wednesday Culture Club That Meets on Friday Appear Unrehearsed in New York Railroad Pageant

gaged by the same with the approval of the government. The company shall be exempt from all local taxes and from most provisions of corporation law.

In extension of its services, the new company may expropriate, use or place restrictions on the land, buildings or any other property or rights of other persons, compensation for which shall be determined by ordinances to be established.

O. & W. Inaugurates Fast Freight Service

Under the title "Pony Express," the New York, Ontario & Western, at the beginning of the month, initiated operation of a new daily merchandise service between New York and all principal points on its line. To make possible an earlier departure from its rail-head at Weehawken, N. J., the road has discontinued the use of carfloats for merchandise out of New York and now offers a pick-up and delivery service handled by Railway Express Agency. For the new service there have also been set up break-bulk stations at intervals along the line where merchandise is transferred from cars to trucks or vice versa for pick-up and delivery in the area. Outbound, the Pony Express, with evening departure, affords same day arrival at Middletown, N. Y., and overnight service to all points west thereof.

July Employment 7.7 Per Cent Above Last Year

Railway employment increased 1.03 per cent—from 991,900 to 1,002,135—during the one-month period from mid-June to mid-July, according to the Interstate Commerce Commission's compilation based on preliminary reports. The increase as compared with July, 1938, was 7.7 per cent, while the index number, based on the 1923-1925 average as 100 and corrected for seasonal variation, stood at 54.7 in July as compared with 54.3 in June and 50.8 in July last year.

Increases over June were reported for all employee groups, while all save that embracing executives, officials and staff assistants (down 0.83 per cent) were above July, 1938. None of the increases over June amounted to much over one per cent; while the largest increases over July, 1938, came in the maintenance of equipment and stores and the maintenance of way and structures groups—up 13.34 per cent and 13.32 per cent respectively.

780,000 Entries in Pullman Car-Naming Contest

American Mile Master was the name selected for a roomette car by the public in a nation-wide car-naming contest conducted by the Pullman Company. During the period from April 25 to June 15, 780,000 entries were received. The rewards were 53 trips to the World's Fair of the winner's choice, to be awarded in pairs to the contestants whose 25 names were selected by the judges. In addition, $200 in spending money was given each of the 25 winners who included with their entries the correct rail and Pullman fares to the exposition they preferred to visit, also 500 consolation prizes of $1 each. To each railroad ticket agent or ticket seller whose name appeared on the entry blanks of the major prize winners, $25 was awarded. The judging was done by the Reuben H. Donnelley Corporation, Chicago.

The contest started quietly, 200,000 entries being received from the start on April 25 to June 1. On the latter date, entries poured in at the rate of 50,000 a day, while in the last three days a quarter of a million entries arrived. More than 100 persons were required for the sorting, filing and indexing. The most popular of the general names submitted were Magic Carpet, Mercury, Silver Streak and Travel Ease.

Suggestions by the Thousands

A total of 6,650 suggestions were submitted by Illinois Central employees for the reduction of costs or the improvement of service between March 6, when the new Employees' Suggestion System was put into practice, and July 20. Allowing for those who have submitted more than one suggestion, this means that more than one-fifth of all the Illinois Central employees have contributed ideas that they thought might be useful to the management of the railroad. Under the plan employees are encouraged to make suggestions and are rewarded for those which will save money or improve railroad operation. Employees submit suggestions, unsigned, on numbered cards, retaining a stub with the same number. Weekly bulletins are posted acknowledging suggestions by number, and the winners present their stubs to receive the awards which are based upon the value of the suggestion. The suggestions are considered by a general suggestion committee consisting of a representative of the organized employees and representatives of all major departments. Cash awards have been made for 232 suggestions, and more than 100 others are still being investigated or studied for possibility of practical application.

Hydraulic Transmission for Diesel Locomotives Demonstrated

The General Machinery Corporation, Hamilton, Ohio, and the Hydro Transmission Corporation, Hamilton, Ohio, were hosts to a group of railway officers and industrial representatives on July 26 and 27 for the purpose of witnessing a demonstration of the performance of a 70-ton industrial locomotive at the Willard, Ohio, yards of the Baltimore & Ohio.

The locomotive, built by the Plymouth Locomotive Works, Plymouth, Ohio, is equipped with a 400-hp. four-cycle Diesel engine built by the General Machinery Corporation, and with the hydraulic torque converter of the Hydro Transmission Corporation.

The torque converter permits the constant horsepower of the Diesel engine for any given throttle setting to be converted into varying combinations of locomotive speed and driving-wheel torque automatically, depending upon the traction demand of the load on the locomotive. The demonstration consisted of starting, accelerating, stalling, restarting and holding a load of 300 tons on a 5 per cent grade, all through the hydraulic transmission. Throughout the demonstration the engine continued to operate without overload, its load and speed under throttle control.

The hydraulic torque converter is of the turbo pump and impeller type and is said to operate under constant oil pressure and at relatively low oil temperature.

Swedish Roads to Be Nationalized by July 1, 1944

Nationalization of all privately-owned railroads in Sweden is provided in a bill recently passed by the Swedish Riksdag, which stipulates that all privately-owned roads, with the exception of street railways and interurbans, are to come under state ownership within a period of five years from July 1, 1939. The total standard railway network in Sweden comprises about 10,480 miles, of which the private railways operate about 5,700 miles and the Swedish State Railways the remainder. Private railways have also built up extensive motor transport operations during recent years, comprising a highway network of some 9,590 miles of route with 1,274 trucks and buses. Nationalization will combine these services with present State railway motor operations covering 2,265 miles of route operated by 318 vehicles.

Some of the alleged advantages of nationalization, according to its proponents are: (1) establishment of a uniform rate system, eliminating existing disparities as applied to various sections of the country; (2) elimination of extra charges now levied for interchange between separately-owned lines; (3) possibility of establishing a zone system for freight rates; (4) extension of electrification; and, (5) greater ease in eliminating differences of gages now characteristic of the scores of short privately-owned railways.

The amount required to indemnify shareholders of the privately-owned companies is estimated at 150,000,000 crowns ($36,000,000) which takes into account capital liabilities, depreciation, losses, etc. The outstanding bonds of the companies, totaling about 180,000,000 crowns ($43,200,000), can be assumed by the government without cash outlay.

N. Y. S. & W. Asks Court to Buy Air-Conditioned Commuters' Cars

Commuters on the New York, Susquehanna & Western will be among the most favored of their class if Walter Kidde, trustee for the road, is successful in receiving permission from the United States district court at Newark, N. J., to purchase and place in operation two Diesel-powered, light-weight, air-conditioned rail-motor cars to operate between Butler, N. J., Paterson and Susquehanna Transfer. The first railroad equipment used solely for short-distance suburban service to be completely air-conditioned in the New York area, the two cars will be equipped for double-end operation by two-man crews and afford seating capacity for 78 passengers.

In connection with the Paterson service, the road is also asking the court to au-

thorize the expenditure of $17,500 to reopen a .75-mile branch extending from its main line to the center of Paterson which has been closed to passenger traffic since 1923. It is proposed that the half-hourly service be maintained between Paterson and Susquehanna Transfer during morning and evening rush hours with a rail car and steam trains and an hourly service during the remainder of the day maintained entirely by the rail car. The other unit may be placed in service between Butler and Susquehanna Transfer (31.8 miles) on a two-hour headway. Circuit Judge William Clark, formerly of the district court at New Jersey, under whose jurisdiction the railroad is being reorganized, will conduct a hearing on the petition at Newark on September 5.

New Record in Average Speed of Freight Trains

Railroads of the United States in the first six months of 1939 established a new high record in the average speed of freight trains, according to J. J. Pelley, president of the Association of American Railroads. This average speed, according to reports for the first half of the year which have just become available, was 64.1 per cent higher than the corresponding period in 1920.

In the first six months of 1939, the average distance traveled per train per day was 405 miles, compared with 400 miles in 1938 and 247 miles in 1920. This represents the average time required for the movement of all freight trains between terminals, including all delays enroute.

"Since 1920," Mr. Pelley pointed out, "there has been an almost constant increase in the average speed of freight trains in this country. Many freight trains operate on fixed schedules the same as passenger trains. In numerous instances, these schedules provide for a speed equal to that formerly maintained by many passenger trains. As a result, the running time of freight trains between many important commercial centers has been reduced by hours and in the case of longer runs, such as from the Pacific Coast to Eastern seaboard markets, for instance, as much as four days have been clipped off the schedule.

"This increase in the speed of freight trains not only expedites the movement of commodities from producer to the markets, but it also enables industries and merchants to operate with smaller inventories than would otherwise be possible."

June a Record Month for Air Lines

Domestic air lines carried more revenue passengers in June than in any previous month on record, according to the latest compilation of traffic statistics issued by the Civil Aeronautics Authority. The total was 164,578, an increase of 64.25 per cent over June, 1938's total of 100,200 revenue passengers. Also, the C. A. A. press release lists the 824,630 lb. of air express carried in June among "other record breaking figures;" this was 47.6 per cent above the comparable June, 1938, figure, but it is not identified as an "all-time high." In the latter category, along with the revenue passengers carried, were June's passenger miles—up 58.03 per cent from the previous year.

I. C. C. Rejects Truck Rates for Forwarders

Affirming the previous decision of Division 5, the Interstate Commerce Commission has found unlawful suspended schedules whereby certain motor carriers proposed to establish quantity truckload and less-than-truckload proportional rates on all freight between Chicago and certain points in Wisconsin, and less-than-truckload proportional rates on like traffic between Chicago and certain points in Illinois and Indiana, and between Evansville, Indianapolis, Fort Wayne, Muncie and South Bend and certain other points in Indiana. As pointed out in the *Railway Age* of December 31, 1938, Division 5's report said that the proposed rates were designed to accommodate forwarders and were calculated to return approximately the same revenue to the motor carriers as they had been receiving as their divisions of joint rates under forwarder tariffs, which can no longer be filed with the commission in view of its recent decisions in the Acme case and in the Freight Forwarding Investigation, holding respectively that forwarders were left unregulated under the Motor Carrier Act and that they are not express companies under Part I.

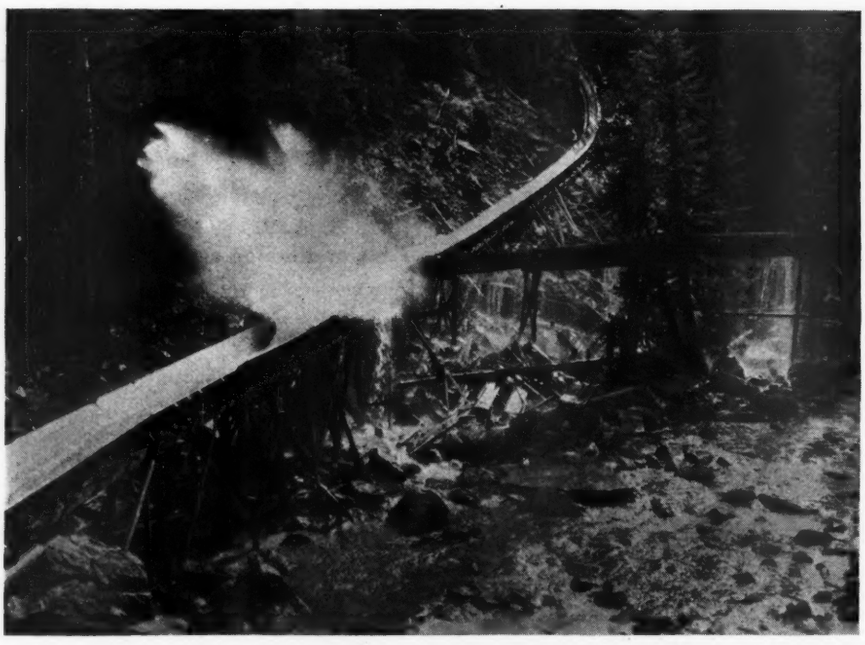
As noted elsewhere in this issue the commission has just handed down a decision requiring that such tariffs of Acme Fast Freight, Inc., be stricken from its files. Of the proposed proportional rates at issue in the present proceeding, the commission says: "Stripped of protective coloring these rates are published as proportional rates primarily as a matter of expediency to serve the purpose of certain freight forwarders and to perpetuate in another form so-called divisions of purported joint rates of freight forwarders. As hereinbefore explained we have ordered stricken from our files the tariffs of certain of these freight forwarders."

To strike down the tariffs the majority relied upon findings that they would violate sections 217 and 216 of the Motor Carrier Act relating respectively to the filing of tariffs and the prohibition of unjust discrimination between persons. "The tariffs naming the proposed rates," the report says in the former connection, "are not what they purport to be, are lacking in clarity and definiteness, and, therefore contravene that section." With respect to the discrimination angle the decision notes that "in practical effect these rates can be used by few, if any, shippers, except the forwarders."

In a separate concurring opinion Commissioner Caskie noted that he was "in full accord" with the majority report. He had no difficulty in reaching that conclusion because "the proposed tariffs are so patently a subterfuge and so completely at variance with the commission's tariff regulations." Mr. Caskie thinks, however, that the commission, having prescribed regulations for the publication of tariffs by motor carriers, might properly, in administering such regulations, have rejected the tariffs "in the public interest without the formality of any notice or hearing."

Chairman Eastman, a dissenter to Division 5's decision, here followed through in that connection with a long dissenting opinion to which Commissioner Mahaffie subscribed. Snipping at much of the reasoning in the majority report, the Chairman found no basis for the finding of unjust discrimination; and with the possible exception of "one minor defect which can readily be corrected" he found "without support of either law or fact" the majority contention that the tariffs violated the commission's tariff regulations.

* * *



A Railroad Tie Goes To Market

Hitting the Water in the Slide to the River at the Camp of the Wyoming Tie Company near Dubois, Wyo.

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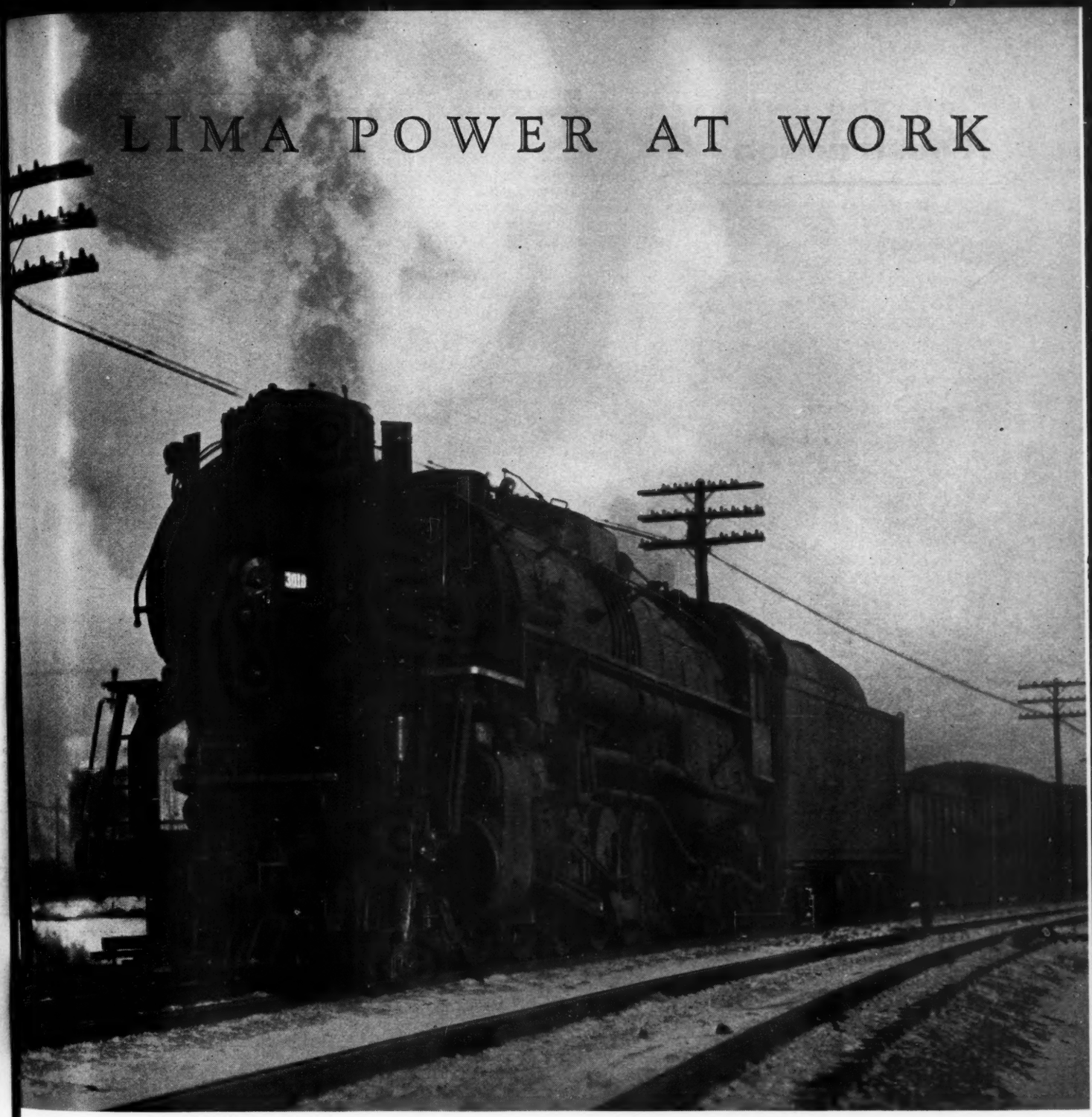

Modern Power Has Greater Earning Capacity

On a score of railroads Lima-built modern power is proving the money-making abilities of new locomotives. » » » Higher speeds and heavier train loads result in greater net earnings. Only modern steam locomotives have the required horsepower capacity to provide both these essentials with any flexibility.

LIMA LOCOMOTIVE WORKS, LIMA LOCOMOTIVE WORKS INCORPORATED INCORPORATED, LIMA, OHIO

Construction

CHICAGO & ILLINOIS MIDLAND.—A contract has been awarded to the St. Clair Construction Company, Wheaton, Ill., for reconstructing the major portion of the Sangamon River bridge at Oxford, Ill.

CHICAGO GREAT WESTERN.—The Illinois Highway Division contemplates the construction of a reinforced concrete subway under the tracks of the Chicago Great Western in Lombard, Ill.

CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC.—A contract has been awarded to the Anderson Construction Company, Council Bluffs, Iowa, for the remodeling of the Milwaukee's round house at Council Bluffs at an estimated cost of $30,000.

ERIE.—The Pennsylvania Public Utility Commission has approved an application of the Department of Highways, for improvements to include a highway crossing below the grade of the Erie tracks and the construction of new bridge, in the village of Shohola, Pa.

LOUISVILLE, KENTUCKY.—A contract for the separation of grades where the tracks of the Louisville & Nashville and the Kentucky & Indiana Terminal cross 7th and Magnolia streets in Louisville, has been awarded by the State Highway Department to the Henry Bickel Company on a low bid of $399,412. Work on the 40-ft. wide underpass will start within ten to thirty days. The structure will carry nine tracks.

MISSOURI PACIFIC.—Bids will be received until August 25 for the construction of an inclined trestle and connecting trackage at Vidalia, La. The United States District Court recently authorized the expenditure of a total of $294,000 for the relocation of the railroad tracks at Vidalia in connection with a proposed new levee along the Mississippi river planned by the War Department. A contract has been awarded to Lonsdale Bros. Construction Company for improvements, alterations and repairs to the Missouri Pacific power house at Kansas City, Mo., at a cost of $50,000.

PENNSYLVANIA.—The Pennsylvania Public Utility Commission has authorized this company to alter its Rockville bridge, Marysville, Pa., which carries the four main tracks of the road over the Susquehanna river and the grade of public highways on each side of the river, in connection with certain changes in tracks and structures to expedite train movements between the Williamsport division and Enola yard. Included in the project is the construction of an additional track over South Main street immediately south of and adjoining the existing bridge. The railroad will assume the entire cost of the improvement estimated at $178,149, of which amount $24,453 is the estimated cost of the bridge alteration.

SOUTHERN PACIFIC.—The Department of the Interior has awarded a contract to the United Concrete Pipe Corporation, Teichert & Son, Inc., and Ralph A. Bell, Pollock, Cal., for the relocation of the last five-mile section of the tracks of the Southern Pacific around the Shasta Reservoir Central Valley project in California. The bid was $1,857,567.

SOUTHERN PACIFIC & MISSOURI PACIFIC.—A contract has been awarded Cage Bros., and L. A. Turner, Bishop, Tex. amounting to approximately $134,000 for the construction of a highway bridge near Kelly Field in San Antonio, Tex., over two tracks of the Texas & New Orleans (Southern Pacific), and one track of the International Great Northern (Missouri Pacific). The bridge will be 1,253 ft. long and will consist of nineteen 40-ft., eight 46-ft., and two 60-ft. I-beam spans. The substructure will consist of reinforced concrete abutments, and interior bents of the spread footing type, six of which will be supported on foundation piling. The bridge will provide a clear roadway of 28 ft. with sidewalks 2 ft. 3 in. wide on each side.

WABASH.—A formal application for authority to construct a $420,000 underpass beneath the Wabash tracks near the junction of Skinker Blvd. and Olive St., St. Louis, Mo., has been filed with the Missouri Public Service Commission by the railroad, the city and county of St. Louis, the Missouri State Highway Commission and University City. Under the contemplated plan, the tracks will be raised from 6½ to 8½ ft. between Maple Ave. and Delmar Blvd., while the street will be depressed to provide the necessary clearance. Of the $420,000 cost, $330,000 has been allocated by the Federal Bureau of Public Roads while the city will provide $90,000 for condemnation costs.

Supply Trade

The National Aluminate Corporation is constructing a 105 ft. by 128 ft., one story addition to its plant at Chicago.

The Inland Steel Company, Chicago, has issued licenses for the manufacture of Ledloy to the **Heppenstall Company,** Pittsburgh, Pa., and the **American Rolling Mill Company,** Middleton, Ohio.

The Crane Company, Chicago, has been appointed national distributors of spring joints manufactured by the **Chiksan Tool Company,** Fullerton, Cal. The latter company will continue to maintain sales representatives in principal cities.

Alfred E. Munch, district manager of **The United States Metallic Packing Company,** Philadelphia, Pa., with headquarters at St. Paul, Minn., retired, effective August 1. He will continue his connection with the company in research work. Mr. Munch became associated with the company in 1927.

Raymond Willey, president of the **Harbison-Walker Refractories Company** has been elected a member of the board of directors of the **American Arch Company** to fill the vacancy caused by the death of **J. E. Lewis,** former president of the Harbison-Walker Refractories Company. **George A. Price,** executive vice-president of the American Arch Company, has been elected to the executive committee in the place of Mr. Lewis.

OBITUARY

William C. Whitcomb, who retired as president of the Whitcomb Locomotive Company, Rochelle, Ill., in 1933, died at Eagle River, Wis., on August 6. He was born in Pittsburgh, Pa., in 1868, and upon completing a college training in engineering, joined his father in the operation of the George D. Whitcomb Company, which later became the Whitcomb Locomotive Company.

Equipment and Supplies

LOCOMOTIVES

THE SOUTHERN NEW YORK RAILWAY, INC., is inquiring for a gasoline or Diesel locomotive, of 40 or 50 tons' capacity.

THE PANAMA CANAL contemplates buying five or ten steam locomotives of the 2-6-0 type. The general purchasing office is at Washington, D. C.

FREIGHT CARS

THE VIRGINIAN is inquiring for 500 all-steel hopper cars of 55 tons' capacity.

THE TENNESSEE COAL, IRON & RAILROAD COMPANY is inquiring for 49 ore cars of 70 tons' capacity.

THE AMERICAN REFRIGERATOR TRANSIT COMPANY will build 100 refrigerator cars in its St. Louis, Mo., shops.

THE MINNEAPOLIS & ST. LOUIS is inquiring for 35 automobile cars of 40 tons capacity.

THE NEW YORK, CHICAGO & ST. LOUIS has ordered 25 steel, covered hopper cars of 70 tons' capacity from the American Car & Foundry Co.

IRON AND STEEL

THE UNITED STATES BUREAU OF RECLAMATION has asked for bids on 2,570 tons of rails for relocating the Southern Pacific's tracks at the Shasta Reservoir Central Valley project in California.

SIGNALING

PENNSYLVANIA.—Sealed proposals will be received at the office of E. J. Lamneck, purchasing agent of this road, 15 North 32nd street, Philadelphia, Pa., until 12 o'clock noon, (e. s. t.) August 22, for the furnishing of signal materials to be used in connection with two federal aid grade crossing protection projects in the state of Pennsylvania.

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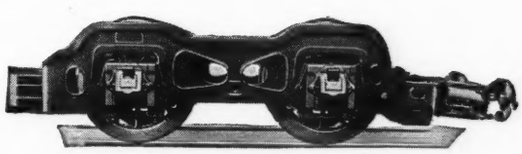
TRAVELERS PRAISE BOOSTER*-HANDLED TRAINS

Canadian Pacific Train in the Kicking Horse Canyon, B. C.

Intensive effort is being made to encourage passenger travel: — air conditioning, improved seating, better lighting, better riding cars, and more speed; all are receiving their share of attention. » » » Regardless, however, of what else is done, the smooth starting that the Booster brings, enhances every other improvement. » » » Travelers praise the comfort of Booster-handled trains. The extra power makes a smooth, quick start. It avoids the jars and jerks that irritate. » » » The Booster emphasizes and capitalizes all other improvements now being made to encourage travel for pleasure. It starts and keeps passengers in a mood to enjoy going to the places you advertise.



*Trademark Registered United States Patent Office

FRANKLIN RAILWAY SUPPLY COMPANY, INC.

NEW YORK
CHICAGO
MONTREAL

Financial

ATCHISON, TOPEKA & SANTA FE.—*Abandonment by California, Arizona & Santa Fe.*—These two companies have applied to the Interstate Commerce Commission for authority, respectively, to abandon operation and abandon the C. A. & St. F.'s 2.7-mile line between Cordes, Ariz., and Blue Bell.

ATLANTIC & EAST CAROLINA.—*Lease of Atlantic & North Carolina.*—This company has been authorized by the Interstate Commerce Commission, Division 4, to lease the properties of the Atlantic & North Carolina.

Stock.—Another decision by Division 4 authorizes the A. & E. C. to issue $100,000 of six per cent non-cumulative preferred stock, consisting of 1,000 shares of $100 par each, and 1,000 shares of no-par common stock having an assigned value of $10 a share to be disposed of in connection with the above-mentioned lease.

ATLANTIC COAST LINE.—*Abandonment.*—Division 4 of the Interstate Commerce Commission has dismissed, at this company's request, its application for authority to abandon a line extending from Walterboro, S. C., to Ehrhardt.

BALTIMORE & OHIO.—*Extension of R. F. C. Loans.*—This road has applied to the Interstate Commerce Commission for approval of extensions to August 1, 1944, of $86,261,578 of debt to the Reconstruction Finance Corporation, pursuant to the road's plan for modification of its fixed charges and extension of maturities.

CANADIAN NATIONAL.—*Abandonment.*—Application of the Canadian National for authority to abandon the line between Hurdman, Ont., and Hawkesbury, 56 miles, has been granted by the Board of Railway Commissioners. The line, known as the L'Orignal subdivision, runs through mixed farming territory.

CHESAPEAKE & OHIO.—*Abandonment.*—This road has applied to the Interstate Commerce Commission for authority to abandon a 2.74-mile segment of its so-called Peach Orchard Sub-division in Lawrence County, Ky.

CENTRAL OF NEW JERSEY.—*Capital Readjustment.*—The Interstate Commerce Commission has authorized intervention in this proceeding by a bondholders' protective committee headed by E. S. Brooks, a member of the New York Stock Exchange firm of Marshall, Campbell & Co. The committee opposes the readjustment plan as set up at present.

CHESAPEAKE & OHIO.—*Trustee for Holding Company.*—E. A. Davis, a Baltimore (Md.) business man, was appointed liquidating receiver for Chesapeake Corporation by the federal circuit court in Baltimore on August 8 by petition of five trustees of the corporation, which is the middle holding company in the former group of Van Sweringen railroad control organizations. Petition for a liquidating trustee is permissible under a plan of dissolution approved by stockholders of the corporation on November 28, 1938, which provided that at any time after dissolution of the corporation, the trustees might request the appointment of a receiver to proceed with liquidation of the remaining assets of Chesapeake and the closing of its affairs. The appointment of Mr. Davis takes the corporation out of the hands of the former trustees and places it under sole control of the receiver, subject to court authorization.

Mr. Davis is president of the United States Fidelity & Guaranty Co., president of the Washington Tobacco Co., vice-president of the Old Dominion Tobacco Co., and a director of the First National Bank of Baltimore.

FAIRPORT, PAINESVILLE & EASTERN.—*Stock.*—This road has applied to the Interstate Commerce Commission for authority to issue and sell common stock in the amount of $233,000 (2,330 shares of $100 par) to be offered to present common stockholders and the proceeds used to provide part of the funds necessary to redeem $365,000 of first mortgage six per cent bonds, Series A.

LEHIGH VALLEY.—*Plan for Adjustment of Interest and Maturities.*—This road filed a petition seeking to adjust its financial set-up under the provisions of the Chandler Act with Circuit Court Judge A. B. Maris and District Court Judges Francis Biddle and O. B. Dickinson in the U. S. district court at Philadelphia, Pa., on August 7. Taking this step closely on the heels of the Baltimore & Ohio, which filed a similar petition July 28, as reported in last week's *Railway Age,* the Lehigh Valley pointed out that, together with its controlled subsidiaries,—the Pennsylvania & New York Canal & Railroad, the Lehigh Valley Railroad Company of New Jersey and the Lehigh Valley Rail Way Company—it is at present unable to earn sufficient funds to meet present fixed charges. The petition contains a plan of financial adjustment which, it is claimed, has the approval of holders of more than 85 per cent of the $105,836,000 of obligations concerned, which plan was reviewed in the *Railway Age* of March 25, page 542. The three-man court set September 29 for a hearing on the merits of the plan, and issued an injunction restraining all legal action against the company by creditors to enforce payment while proceedings are pending.

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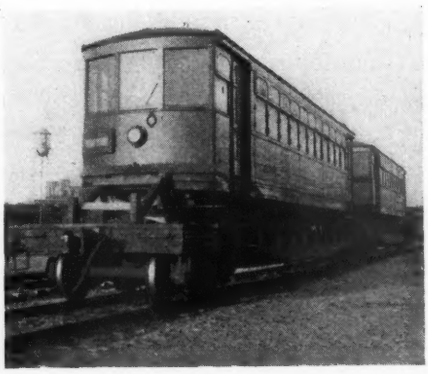

A Graveyard Consignment of Abandoned Street Cars in the R. F. & P. Yard at Richmond, Va., on the Way to the Scrap Heap

MINNEAPOLIS & ST. LOUIS.—*Protective Committee.*—Edward C. Delafield and Harry Bronner have been conditionally authorized by the Interstate Commerce Commission, Division 4, to serve as a protective committee for holders of Minneapolis & St. Louis Railway Company first mortgage extended six per cent gold bonds.

MISSOURI-ILLINOIS.—*Equipment Trust Certificates.*—The trustee of this road has been authorized by the Interstate Commerce Commission, Division 4, to assume liability for $590,000 of 2½ per cent equipment trust certificates, Series AA, to be sold at not less than 100.265 per cent of par and accrued interest or on a 2.44 per cent basis to the First National Bank of St. Louis. The certificates will mature $59,000 on August 1 of each year from 1940 to 1949.

MISSOURI PACIFIC.—*Abandonment.*—This road has been authorized by the Interstate Commerce Commission, Division 4, to abandon an 11.9-mile segment of its so-called Belmont branch in Mississippi County, Mo.

NEW YORK, NEW HAVEN & HARTFORD.—*Reorganization.*—The Boston & Providence has filed with the Interstate Commerce Commission a plan embodying alternative proposals whereby it might be included in a reorganized New Haven system either on a lease or merger basis; or, if negotiations fail to effect such inclusion on "fair and equitable terms," the plan provides for the financing necessary for operation as an independent carrier.

NORFOLK & PORTSMOUTH BELT LINE.—*Notes.*—The Atlantic Coast Line, Southern, Chesapeake & Ohio, Pennsylvania, Seaboard Air Line, Norfolk & Western, Norfolk Southern and Virginian have applied to the Interstate Commerce Commission for authority to assume liability as guarantors of the 1½ per cent serial promissory notes in the amount of $700,000 which this company has applied for authority to issue in exchange for a like amount of 2½ per cent notes.

SOUTHERN.—*Equipment Trust Certificates.*—This road has applied to the Interstate Commerce Commission for authority to assume liability for $400,000 of two per cent equipment trust certificates, Series DD, which it proposes to sell to Blyth & Co., for 100.0791 per cent of par and accrued dividends or on a 1.985 per cent basis. The application takes the form of a petition for a modification of the commission's order of October 27, 1938, whereby the Southern was authorized to issue $500,000 of four per cent certificates for sale to the Reconstruction Finance Corporation which had taken a previous issue of $13,500,000. None of the $500,000 issue was sold to the R. F. C. and the Southern now finds that its financial condition has so improved as to permit it to make a better deal in regular investment channels. When the transaction with R. F. C. was

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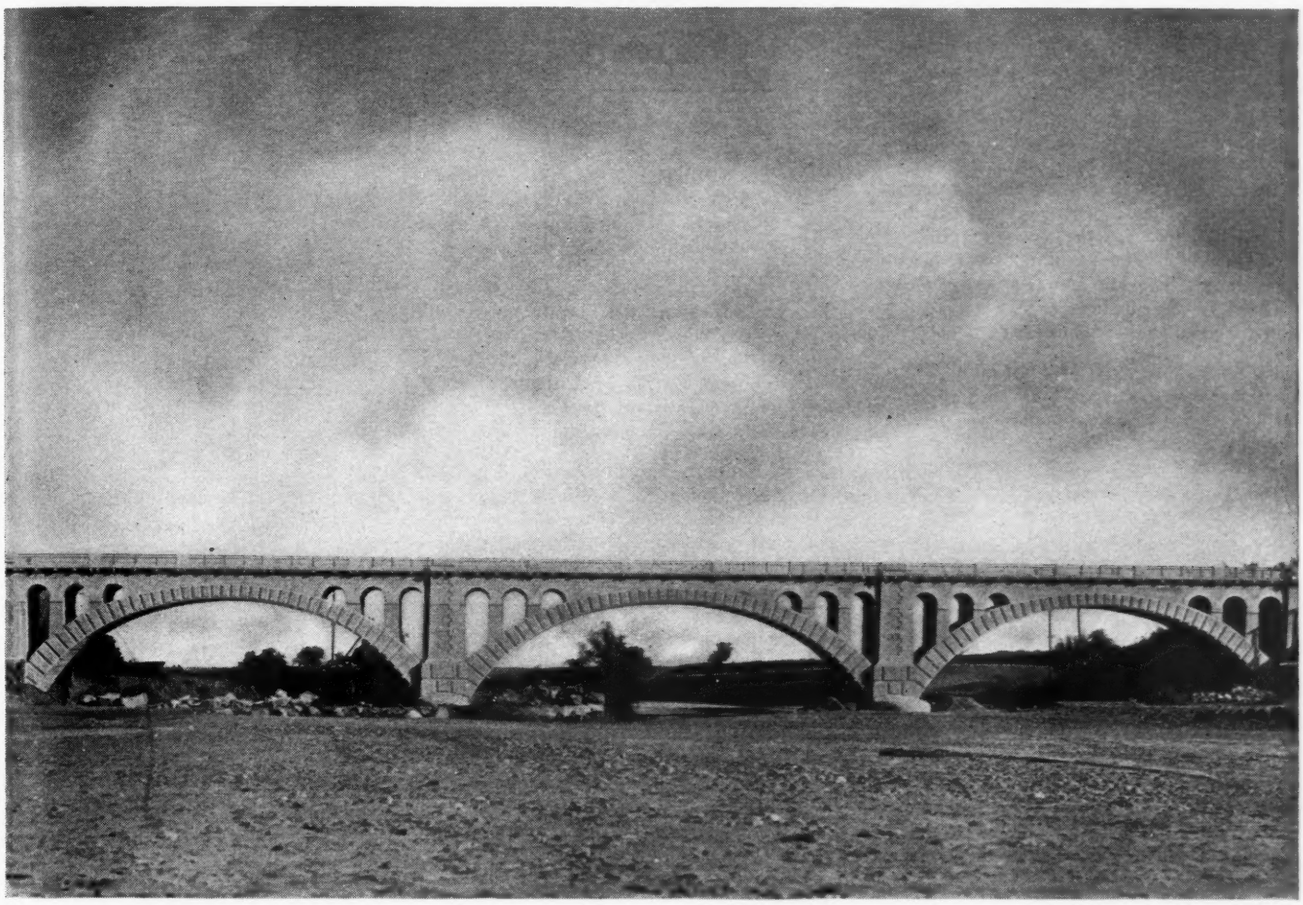
NO. 96 OF A SERIES OF FAMOUS ARCHES OF THE WORLD



RAMNA BRIDGE

ROUMANIA

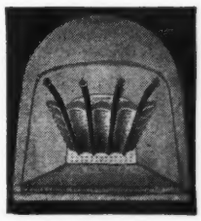
The Ramna Bridge is one of several recent types of masonry bridges introduced on the Roumanian State Railways. It is a double-track structure of local stone and is situated on the main-line between Buzau and Marasesti. Its three 108 ft. arches are approximately 32 ft. from rail level to river bed. » » » Equally modern is the Security Sectional Arch. Although the basic design, which was introduced to the railroads 28 years ago, remains the same, it has been continuously developed to keep pace with locomotive design, and is today the standard on American railroads.

* * * * *

There's More to SECURITY ARCHES *Than Just Brick*

HARBISON-WALKER REFRACTORIES CO.

Refractory Specialists



AMERICAN ARCH CO.
INCORPORATED
60 EAST 42nd STREET, NEW YORK, N. Y.
Locomotive Combustion Specialists

being arranged the road proposed to make a down payment of $36,000 on $536,000 worth of equipment, financing the remaining half-million with the four per cent certificates. It now finds that it can make a down payment of $136,000, which is in excess of 25 per cent and which leaves only $400,000 to be financed by issuance of certificates. Sixteen banking firms were invited to bid on a $400,000 issue thus set up, and the above-mentioned bid of Blyth & Co. was the most favorable of five received. The proposed trust agreement would provide for the maturity of $40,000 of the certificates on September 1 of each year from 1940 to 1949.

SOUTHERN PACIFIC.—*Equipment Trust Certificates.*—This road has been authorized by the Interstate Commerce Commission to assume liability for $7,575,000 of 2½ per cent equipment trust certificates, series P, to be sold at 101.41 per cent of par and accrued dividends.

SOUTHERN PACIFIC.—*Abandonment by the Arizona Eastern.*—The Southern Pacific has asked the Interstate Commerce Commission for authority to abandon the operation and the Arizona Eastern has requested permission to abandon a portion of its Florence branch extending from Poston, Ariz., to Florence Junction, 5.6 miles.

TERMINAL RAILROAD ASSOCIATION OF ST. LOUIS.—*Bids for Refunding Bond Issue.*—This property has asked for competitive bids for a forthcoming issue of $7,000,000 of Series B refunding and improvement bonds maturing July 1, 1974, bids to be considered August 14. It is stipulated that the coupon rate on the new issue is not to exceed 3½ per cent. Alternate bids may be submitted for any rate providing the road realizes $7,000,000 from the sale. The issue will carry a sinking fund sufficient to retire all of the bonds by maturity.

WINSTON-SALEM TERMINAL COMPANY.—*Bonds.*—The Interstate Commerce Commission, Division 4, has authorized this company to issue not exceeding $800,000 of first mortgage 3½ per cent bonds to be sold at 111.078 per cent of par and accrued interest, and the proceeds used to redeem a like amount of first mortgage five per cent gold bonds. The same decision authorizes the Southern, Norfolk & Western and the Winston-Salem Southbound (joint affiliate of the N. & W. and Atlantic Coast Line) to assume liability as guarantors of the issue. The above-mentioned price of 111.078 per cent of par was that offered by Dick & Merle-Smith to whom the applicant had agreed to sell the bonds subject to I. C. C. approval.

Dividends Declared

Louisville & Nashville.—$1.25, payable August 30 to holders of record July 31.

Pittsburgh, Youngstown & Ashtabula.—$1.75, payable September 1 to holders of record August 21.

Average Prices of Stocks and Bonds

	Aug. 8	Last week	Last year
Average price of 20 representative railway stocks..	29.43	30.03	29.43
Average price of 20 representative railway bonds..	59.98	60.27	60.90

Railway Officers

EXECUTIVE

Carl L. Jellinghaus, executive secretary to the president of the New York Central System has been appointed assistant to the president, with headquarters at New York, effective August 1.

H. J. McDonald has been appointed assistant to vice-president of the Chesapeake & Ohio, with headquarters at Cleveland, Ohio, and **F. W. McCullough,** has been appointed assistant to vice-president, with headquarters at Huntington, W. Va.

R. R. Farmer, vice-president and claim agent of the Louisiana, Arkansas & Texas, with headquarters at Greenville, Tex., has retired after 43 years of railroad service. He entered railway service with the Missouri-Kansas-Texas in 1895 and was employed at various times as trainmaster, assistant superintendent and terminal trainmaster at Ray Terminal. He was promoted to vice-president of the Louisiana Railway & Navigation Company in 1923, and became vice-president of the L. A. & T. in 1930.

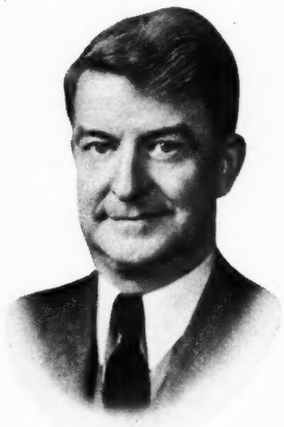
OPERATING

J. E. Griffith, supervisor of track of the Southern, with headquarters at Charlottesville, Va., has been promoted to trainmaster at Charleston, S. C.

W. J. Hogan, superintendent of the Grand Trunk Western, with headquarters at Battle Creek, Mich., has been promoted to general superintendent, with headquarters at Detroit, to succeed **J. A. Clancy,** and has been replaced by **Walter H. Edmondson,** assistant to the general manager at Detroit.

John A. Clancey, general superintendent of the Grand Trunk Western, with headquarters at Detroit, Mich., has been promoted to general manager, with the same headquarters, to succeed **P. D. Fitzpatrick,** deceased. A photograph and sketch of Mr. Clancey appeared in the *Railway Age* of January 7, when he was made general superintendent.

George H. Minchin, who has been promoted to assistant general manager of the Southern district of the Western lines of the Atchison, Topeka & Santa Fe, as reported in the *Railway Age* of August 5, was born at Stringbrook, Ont., on July 20, 1882. He was first employed by the Santa Fe as a station clerk at La Junta, Colo., in 1902, and four years later was transferred to the general manager's office in Topeka, where he was made chief clerk in 1908. He became transportation inspector at Topeka in 1909, and was promoted to trainmaster on the Illinois division in 1917. In 1920, he was promoted to assistant superintendent of the Illinois division, and after serving in a similar capacity on the Missouri division, was promoted to superintendent of the Illinois division at Chillicothe on November 1, 1922. On November 1, 1938, when the



George H. Minchin

divisions were consolidated, he was named superintendent of both the Illinois and Missouri divisions.

James L. Truden, whose appointment as general manager of the Boston & Albany at Boston, Mass., was reported in the *Railway Age* of July 29, entered the service of the Boston & Albany on October 14, 1889, as telegraph operator at North Adams Junction, east of Pittsfield, Mass. On January 7, 1897, Mr. Truden

James L. Truden

was appointed assistant yardmaster and on February 1, 1900, night yardmaster, with the same headquarters. On November 1, 1901, he became train dispatcher at Springfield; on January 1, 1907, trainmaster, and on November 1, 1907, superintendent at Springfield. Mr. Truden was appointed general superintendent at Boston in February, 1910, the position he held until his recent appointment as general manager.

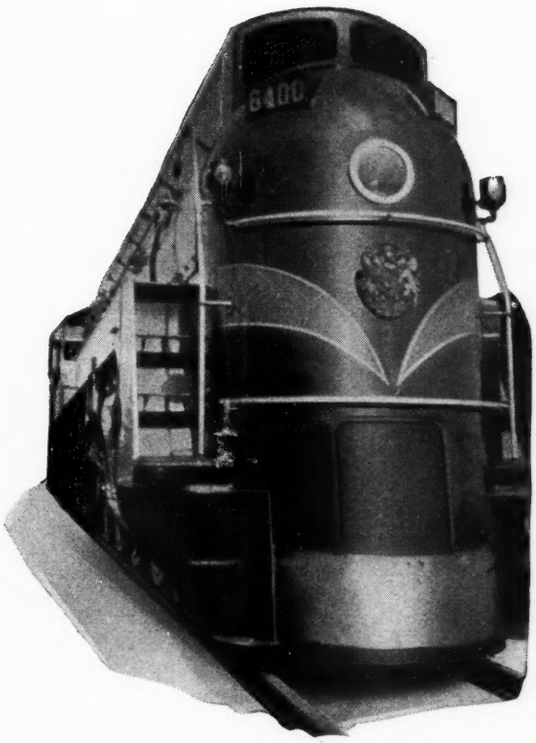
M. F. Weeks, terminal superintendent of the Kansas City Terminal division of the Missouri Pacific, with headquarters at Kansas City, Mo., has been appointed assistant superintendent of the Joplin-White River divisions, with headquarters at Ne-

(*Continued on page 272*)

Table of Freight Operating Statistics appears on next left-hand page

Canada's Royal Family of the Rails

—Now being exhibited at the New York World's Fair—



C. N. R.
Locomotive 6400

C. P. R.
Locomotive 2850

These two locomotives hauled the Royal Train of Their Majesties, King George VI and Queen Elizabeth, during their Majesties' trans-Canada visit in the months of May and June 1939.

Both locomotives are equipped with Elesco Type "E" superheaters, American multiple-valve throttles, Elesco feedwater preheating devices, which are standard equipment on Canadian Railways, and Elesco tangential steam dryers.

ELESCO

A-1352

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Freight Operating Statistics of Large Steam Railways—Selected Items for the Month of May,

Region, road, and year	Miles of road operated	Train-miles	Locomotive-miles: Principal and helper	Locomotive-miles: Light	Car-miles: Loaded (*thousands*)	Car-miles: Per cent loaded	Ton-miles (*thousands*): Gross, excluding locomotives and tenders	Ton-miles (*thousands*): Net, revenue and non-revenue	Number of road locomotives on line: Serviceable: Not stored	Serviceable: Stored	Unserviceable	Per cent unserviceable
New England Region:												
Boston & Albany 1939	374	125,954	131,428	10,712	2,853	63.4	166,256	57,812	56	5	27	30.7
1938	374	108,657	113,281	8,150	2,546	66.8	140,572	47,893	47	10	33	36.7
Boston & Maine 1939	1,916	262,436	292,946	23,494	9,421	68.4	532,111	200,623	127	5	80	37.7
1938	1,941	234,144	258,265	21,326	8,394	70.4	458,813	170,258	118	4	128	51.2
N. Y., New Hav. & Hartf.. 1939	1,854	337,847	425,541	27,741	11,886	64.6	662,018	236,963	176	2	85	35.3
1938	1,975	297,796	374,727	19,720	10,148	65.2	561,639	203,005	167	22	84	30.7
Great Lakes Region:												
Delaware & Hudson 1939	830	221,973	286,996	28,197	7,429	63.0	468,144	218,017	115	52	84	33.5
1938	830	197,238	261,193	23,128	6,575	63.2	412,757	191,849	101	120	40	15.3
Del., Lack. & Western..... 1939	983	354,422	395,826	56,567	12,161	65.5	730,745	288,833	131	2	77	36.7
1938	983	308,031	347,242	52,647	10,628	66.2	636,764	249,425	120	15	88	39.5
Erie (incl. Chi. & Erie).... 1939	2,290	601,127	635,103	40,912	25,905	65.3	1,563,608	580,520	190	48	233	49.5
1938	2,275	542,104	580,316	36,484	23,781	65.7	1,429,321	526,462	197	60	213	45.3
Grand Trunk Western..... 1939	1,023	221,163	221,956	1,404	6,041	60.6	369,375	117,512	64	4	35	34.0
1938	1,027	209,177	210,687	1,435	5,244	59.5	326,037	104,677	64	4	46	40.4
Lehigh Valley 1939	1,266	312,985	346,480	48,578	12,271	62.6	788,801	326,480	115	..	110	48.9
1938	1,288	273,485	302,711	39,266	10,917	65.2	687,102	289,031	116	3	137	53.5
New York Central..... 1939	10,613	2,276,676	2,376,515	116,562	73,386	59.0	4,830,153	1,859,344	738	229	463	32.4
1938	10,651	2,138,174	2,238,470	122,469	68,655	59.2	4,492,687	1,722,755	700	314	477	32.0
N. Y., Chicago & St. Louis. 1939	1,672	455,177	461,515	5,698	16,351	63.3	973,280	334,197	145	11	42	21.2
1938	1,672	436,260	441,594	5,098	14,839	61.8	882,205	297,229	137	27	34	17.2
Pere Marquette 1939	2,081	324,693	329,752	5,453	8,034	59.8	518,708	184,782	108	7	48	29.4
1938	2,081	268,859	277,892	5,605	6,956	59.5	449,584	160,544	91	31	43	26.1
Pittsburgh & Lake Erie.... 1939	233	44,742	46,041	32	1,792	63.3	140,804	76,480	27	11	36	48.6
1938	233	47,780	48,719	....	1,881	54.3	163,424	85,267	22	13	37	51.4
Wabash 1939	2,397	537,419	546,913	11,510	16,787	63.0	1,001,967	330,226	134	6	134	48.9
1938	2,421	494,411	504,602	10,725	15,197	63.4	898,965	295,112	129	20	142	48.8
Central Eastern Region:												
Baltimore & Ohio..... 1939	6,278	1,248,655	1,532,978	163,238	38,729	63.6	2,537,496	1,080,416	591	135	489	40.2
1938	6,314	1,162,148	1,409,853	138,194	34,737	60.9	2,343,986	988,701	523	186	559	44.1
Central of New Jersey..... 1939	680	152,729	173,000	34,097	4,745	60.1	328,222	151,220	72	..	84	53.8
1938	678	134,984	153,270	28,105	4,321	59.1	306,137	142,454	72	5	79	50.6
Chicago & Eastern Illinois.. 1939	927	159,422	159,556	2,897	3,977	66.9	233,534	91,616	52	4	38	40.4
1938	927	157,423	157,722	2,585	3,695	65.7	220,306	87,742	54	..	51	48.6
Elgin, Joliet & Eastern..... 1939	390	86,603	87,844	1,227	2,072	58.9	152,170	69,558	50	7	26	31.3
1938	435	74,164	74,891	618	1,643	58.9	120,944	50,037	47	4	32	38.6
Long Island 1939	379	27,960	28,964	17,802	297	51.5	23,083	9,172	33	3	12	25.0
1938	390	25,746	26,612	15,041	279	52.6	21,382	8,641	27	13	7	14.9
Pennsylvania System 1939	9,998	2,446,648	2,962,859	366,038	91,112	60.8	6,042,105	2,477,007	1,096	89	1,090	47.9
1938	10,023	2,153,924	2,570,290	285,310	81,259	60.8	5,370,772	2,197,552	1,062	507	804	33.9
Reading 1939	1,443	368,560	409,536	50,726	10,347	62.1	728,511	342,576	178	8	175	48.5
1938	1,444	335,706	373,659	46,232	9,596	60.6	696,493	330,143	167	40	134	39.3
Pocahontas Region:												
Chesapeake & Ohio..... 1939	3,055	629,896	655,733	23,864	23,805	58.7	1,841,886	950,065	335	59	141	26.4
1938	3,050	684,303	711,682	28,138	28,647	55.6	2,375,740	1,260,855	302	102	141	25.9
Norfolk & Western..... 1939	2,169	479,933	499,272	27,666	17,882	58.9	1,367,999	663,407	255	73	33	9.1
1938	2,178	502,260	516,156	23,240	18,562	57.3	1,468,176	725,312	247	86	40	10.7
Southern Region:												
Atlantic Coast Line..... 1939	5,081	703,402	712,959	9,524	14,698	61.1	852,818	279,527	265	13	104	27.2
1938	5,079	586,223	598,694	8,661	13,290	62.3	748,810	242,732	251	26	90	24.5
Central of Georgia..... 1939	1,838	252,744	256,192	3,377	5,366	73.2	293,391	113,374	95	..	24	20.2
1938	1,886	238,569	242,913	3,832	4,971	71.0	280,591	106,890	94	..	31	24.8
Illinois Central (incl. Y. 1939	6,537	1,299,270	1,310,764	24,941	34,933	60.2	2,228,566	849,570	524	65	269	31.4
& M. V.) 1938	6,541	1,263,595	1,269,186	22,621	32,572	60.4	2,070,366	786,633	610	17	235	27.3
Louisville & Nashville..... 1939	4,899	1,026,369	1,081,531	22,929	22,579	62.4	1,435,307	574,706	323	13	204	37.8
1938	4,929	1,041,542	1,114,089	23,009	23,695	58.8	1,628,885	692,254	325	33	195	35.3
Seaboard Air Line..... 1939	4,305	566,058	588,437	4,056	13,829	62.8	823,880	279,329	239	12	51	16.9
1938	4,305	496,093	513,127	5,125	12,396	60.9	751,910	249,690	207	28	68	22.4
Southern 1939	6,532	1,213,866	1,229,223	17,223	27,290	64.8	1,577,922	595,829	479	4	178	26.9
1938	6,561	1,128,697	1,145,194	16,618	24,366	64.4	1,427,776	547,475	492	2	249	33.5
Northwestern Region:												
Chicago & North Western.. 1939	8,366	785,927	806,373	17,983	22,630	65.2	1,390,602	513,973	300	93	271	40.8
1938	8,388	715,069	734,737	17,338	20,390	66.4	1,224,360	448,646	284	211	208	29.6
Chicago Great Western..... 1939	1,450	243,439	243,631	6,171	6,863	61.9	425,073	148,152	65	5	20	22.2
1938	1,450	214,470	214,554	7,290	6,125	61.5	373,806	132,670	60	3	25	28.4
Chi., Milw., St. P. & Pac... 1939	10,934	1,164,746	1,196,622	40,394	32,236	62.5	2,046,813	810,972	381	100	167	25.8
1938	10,943	1,077,942	1,110,327	33,728	28,370	61.8	1,795,511	694,273	382	139	158	23.3
Chi., St. P., Minneap. & Om.. 1939	1,619	200,530	208,610	9,819	4,663	65.1	288,549	111,834	94	26	21	14.9
1938	1,636	191,119	196,569	8,132	4,203	67.3	253,673	106,343	97	29	15	10.6
Great Northern 1939	7,976	754,856	747,276	27,926	25,984	60.3	1,820,849	781,872	335	52	158	29.0
1938	7,976	601,516	588,878	21,003	18,854	68.6	1,173,979	498,987	304	87	156	28.5
Minneap., St. P. & S. St. M. 1939	4,266	365,855	369,035	2,027	8,262	64.3	491,200	195,584	112	..	34	23.3
1938	4,273	339,279	341,659	1,564	6,591	65.3	384,162	147,436	112	1	43	27.6
Northern Pacific 1939	6,424	657,394	691,754	33,981	21,709	64.9	1,368,596	576,608	336	18	90	20.3
1938	6,423	550,182	571,919	27,022	17,231	67.1	1,034,277	417,361	282	81	90	19.9
Central Western Region:												
Alton 1939	914	190,341	201,255	1,358	4,187	60.5	274,177	100,937	51	20	18	20.2
1938	912	184,604	191,388	771	3,751	57.2	248,255	81,867	58	13	31	30.4
Atch., Top. & S. Fe (incl. 1939	13,466	1,691,333	1,803,649	79,083	47,476	61.8	3,021,555	989,272	559	98	236	26.4
G. C. & S. F. & P. & S. F.). 1938	13,512	1,647,165	1,775,524	80,623	45,429	61.6	2,877,093	912,474	557	66	310	33.2
Chicago, Burl. & Quincy... 1939	8,854	1,045,375	1,081,597	34,438	29,631	63.8	1,810,831	698,953	406	68	96	16.8
1938	8,893	970,689	988,196	26,998	26,171	62.6	1,601,197	601,555	367	94	96	17.2
Chi., Rock I. & Pac. (incl. 1939	7,834	1,057,624	1,073,344	6,038	24,601	58.7	1,568,536	551,997	339	74	158	27.7
Chi., Rock I. & Gulf).... 1938	8,075	1,090,396	1,101,022	6,198	24,710	58.6	1,581,021	555,146	366	38	215	34.7
Denver & Rio Gr. Western. 1939	2,555	252,494	276,123	26,492	7,175	66.3	445,596	176,001	130	43	24	12.2
1938	2,570	231,800	254,710	25,905	6,386	65.3	396,692	157,259	134	33	39	18.9
Southern Pac.—Pac. Lines.. 1939	8,569	1,406,259	1,530,443	165,920	47,588	60.6	3,120,869	1,023,479	555	36	170	22.3
1938	8,575	1,313,473	1,431,459	157,807	43,550	61.3	2,778,417	905,090	504	43	210	27.7
Union Pacific 1939	9,899	1,740,015	1,797,681	89,944	54,924	66.4	3,298,716	1,162,950	509	74	282	32.6
1938	9,912	1,475,920	1,520,277	70,874	49,102	65.9	2,930,480	1,030,961	492	147	236	27.0
Southwestern Region:												
Mo.-Kansas-Texas Lines ... 1939	3,282	367,815	370,316	5,401	8,923	56.7	570,377	188,891	87	3	112	55.4
1938	3,282	346,830	349,515	5,829	8,677	59.1	549,370	192,588	95	3	108	52.4
Missouri Pacific 1939	7,146	1,030,725	1,061,657	23,175	29,953	61.5	1,909,213	690,314	347	73	115	21.5
1938	7,147	1,008,494	1,028,607	22,309	28,707	60.3	1,855,414	672,960	376	89	87	15.8
St. Louis-San Francisco.... 1939	4,804	720,284	725,369	9,446	14,592	60.2	934,650	361,906	282	50	44	11.7
1938	4,847	656,793	662,478	9,419	13,190	59.1	850,364	320,118	219	83	87	22.4
St. Louis Southw. Lines.... 1939	1,673	256,041	256,584	3,285	7,089	58.1	444,271	147,988	65	35	17	14.5
1938	1,690	267,851	272,471	3,622	7,411	58.1	462,272	149,187	76	30	21	16.5
Texas & New Orleans..... 1939	4,415	548,157	548,174	3,572	12,868	62.7	811,665	292,960	207	27	40	14.6
1938	4,415	526,431	526,561	4,208	12,673	63.3	783,199	278,492	204	37	42	14.8
Texas & Pacific 1939	1,932	262,070	262,070	2,024	7,534	58.8	487,317	161,744	77	7	101	54.6
1938	1,932	267,187	267,187	1,410	7,671	59.1	494,410	160,353	83	9	92	50.0

Compiled by the Bureau of Statistics, Interstate Commerce Commission. Subject to revision.

1939, Compared with May, 1938, for Roads with Annual Operating Revenues above $25,000,000

Region, road, and year		Number of freight cars on line: Home	Foreign	Total	Per cent unserviceable	Gross ton-miles per train-hour, excluding locomotives and tenders	Gross ton-miles per train-mile, excluding locomotives and tenders	Net ton-miles per train-mile	Net ton-miles per loaded car-mile	Net ton-miles per car-day	Car-miles per car-day	Net ton-miles per mile of road per day	Pounds of coal per 1,000 gross ton-miles, including locomotives and tenders	Locomotive-miles per locomotive-day
New England Region:														
Boston & Albany	1939	1,131	3,893	5,024	2.8	20,803	1,325	461	20.3	373	29.0	4,986	158	55.5
	1938	979	3,813	4,792	3.2	21,478	1,302	444	18.8	329	26.7	4,131	162	46.4
Boston & Maine	1939	6,602	7,729	14,331	6.8	28,286	2,035	767	21.3	456	31.3	3,378	95	51.6
	1938	8,480	7,367	15,847	12.9	26,978	1,966	730	20.3	366	25.6	2,830	94	39.3
N. Y., New Hav. & Hartf.	1939	8,007	10,690	18,697	8.2	29,139	1,988	712	19.9	403	31.3	4,123	98	60.5
	1938	11,478	9,467	20,945	16.4	28,308	1,916	692	20.0	325	24.9	3,316	97	51.3
Great Lakes Region:														
Delaware & Hudson	1939	8,050	3,703	11,753	4.7	32,095	2,121	988	29.5	635	34.3	8,475	112	42.6
	1938	7,531	2,662	10,193	6.2	30,377	2,103	978	29.2	563	30.5	7,456	103	37.0
Del., Lack. & Western	1939	13,154	5,863	19,017	14.5	37,114	2,095	828	23.8	493	31.7	9,478	126	72.6
	1938	13,393	4,879	18,272	16.9	34,686	2,099	822	23.5	432	27.9	8,185	132	63.6
Erie (incl. Chi. & Erie)	1939	17,465	9,881	27,346	6.2	44,414	2,622	974	22.4	674	46.1	8,177	101	51.3
	1938	18,012	10,171	28,183	10.0	44,090	2,655	978	22.1	578	39.7	7,465	92	47.3
Grand Trunk Western	1939	4,859	5,185	10,044	11.2	34,290	1,674	533	19.4	380	32.2	3,705	91	73.8
	1938	6,315	4,016	10,331	18.2	33,344	1,563	502	20.0	342	28.8	3,288	96	63.3
Lehigh Valley	1939	10,486	7,981	18,467	1.7	45,519	2,555	1,057	26.6	556	33.4	8,319	114	60.0
	1938	10,729	8,293	19,022	12.6	46,062	2,545	1,071	26.5	497	28.7	7,239	106	44.9
New York Central	1939	91,206	52,709	143,915	20.3	37,361	2,139	823	25.3	419	28.1	5,651	101	62.6
	1938	102,890	53,170	156,060	19.5	36,892	2,118	812	25.1	359	24.2	5,218	100	57.6
N. Y., Chicago & St. Louis	1939	6,713	6,134	12,847	5.5	40,880	2,143	736	20.4	802	61.9	6,448	86	81.8
	1938	7,880	5,483	13,363	6.6	40,250	2,025	682	20.0	701	56.7	5,734	84	77.9
Pere Marquette	1939	9,878	5,350	15,228	4.8	27,874	1,601	570	23.0	393	28.6	2,864	95	73.3
	1938	11,141	4,447	15,588	4.9	28,097	1,672	597	23.1	330	24.1	2,489	91	61.3
Pittsburgh & Lake Erie	1939	9,629	8,928	18,557	33.6	41,943	3,150	1,711	42.7	135	5.0	10,588	93	22.4
	1938	9,209	8,196	17,405	33.4	48,523	3,420	1,785	45.3	165	6.7	11,805	85	24.0
Wabash	1939	13,342	8,938	22,280	11.7	39,265	1,879	619	19.7	493	39.8	4,444	109	72.5
	1938	13,953	7,850	21,803	8.3	38,403	1,833	602	19.4	442	35.8	3,932	107	60.2
Central Eastern Region:														
Baltimore & Ohio	1939	58,133	22,368	80,501	19.0	29,020	2,063	878	27.9	437	24.6	5,551	148	48.0
	1938	63,317	18,555	81,872	18.1	28,954	2,044	862	28.5	384	22.1	5,051	133	42.4
Central of New Jersey	1939	9,874	10,408	20,282	30.6	27,343	2,281	1,051	31.9	241	12.6	7,714	142	55.6
	1938	10,495	8,792	19,287	32.9	29,368	2,387	1,111	33.0	242	12.4	6,778	128	48.8
Chicago & Eastern Illinois	1939	3,350	2,970	6,320	4.4	27,798	1,469	576	23.0	462	30.0	3,188	124	59.0
	1938	3,504	2,496	6,000	5.7	26,886	1,403	559	23.7	470	30.1	3,053	123	51.5
Elgin, Joliet & Eastern	1939	8,564	2,527	11,091	5.4	16,801	1,816	830	33.6	198	10.0	5,753	116	48.7
	1938	8,633	1,910	10,543	12.8	15,987	1,679	695	30.5	152	8.5	3,711	121	40.6
Long Island	1939	288	3,347	3,635	4.6	6,074	854	339	30.9	83	5.2	781	354	46.6
	1938	369	3,670	4,039	3.9	6,125	854	345	31.0	84	5.1	715	279	40.4
Pennsylvania System	1939	201,748	46,163	247,911	23.5	38,669	2,512	1,030	27.2	322	19.5	7,992	117	51.8
	1938	209,239	41,726	250,965	17.6	38,385	2,533	1,036	27.0	282	17.2	7,073	111	43.3
Reading	1939	25,474	9,099	34,573	26.7	24,800	1,986	934	33.1	319	15.5	7,658	142	46.3
	1938	26,535	7,506	34,041	18.3	26,885	2,081	986	34.4	301	14.4	7,375	129	44.0
Pocahontas Region:														
Chesapeake & Ohio	1939	48,718	9,407	58,125	4.9	46,392	2,951	1,522	39.9	509	21.7	10,032	79	45.4
	1938	50,559	10,445	61,004	3.8	54,223	3,495	1,855	44.0	665	27.2	13,335	73	47.7
Norfolk & Western	1939	42,424	4,198	46,622	4.4	46,036	2,879	1,396	37.1	444	20.3	9,866	100	51.4
	1938	42,189	3,607	45,796	1.6	45,671	2,951	1,458	39.1	511	22.8	10,742	102	51.2
Southern Region:														
Atlantic Coast Line	1939	15,156	7,467	22,623	20.2	22,970	1,218	399	19.0	384	33.0	1,775	106	65.5
	1938	17,380	6,523	23,903	20.9	23,172	1,279	414	18.3	312	27.4	1,542	109	58.1
Central of Georgia	1939	5,081	3,158	8,239	2.0	22,991	1,164	450	21.1	463	29.9	1,990	117	75.5
	1938	6,073	3,524	9,597	1.5	22,643	1,181	450	21.5	397	26.0	1,828	116	70.9
Illinois Central (incl. Y. & M. V.)	1939	30,403	13,688	44,091	4.6	29,255	1,729	659	24.3	635	43.4	4,192	129	54.4
	1938	36,721	14,332	51,053	15.2	28,148	1,645	625	24.2	488	33.4	3,879	126	52.0
Louisville & Nashville	1939	42,926	9,402	52,328	20.0	23,739	1,404	562	25.5	355	22.3	3,784	135	69.1
	1938	41,071	8,460	49,531	16.3	25,495	1,566	665	29.2	444	25.8	4,530	123	70.5
Seaboard Air Line	1939	11,375	4,550	15,925	4.3	25,827	1,477	501	20.2	545	42.9	2,093	116	70.8
	1938	11,649	4,289	15,938	3.5	26,016	1,542	512	20.1	481	39.2	1,871	110	60.4
Southern	1939	23,526	15,969	39,495	10.8	23,596	1,307	493	21.8	485	34.3	2,942	135	63.8
	1938	21,458	15,738	37,196	10.7	22,504	1,272	488	22.5	469	32.4	2,692	137	53.4
Northwestern Region:														
Chicago & North Western	1939	37,530	17,251	54,781	10.5	29,062	1,830	676	22.7	306	20.7	1,982	109	43.6
	1938	41,039	17,417	58,456	7.9	28,084	1,767	647	22.0	253	17.3	1,725	114	38.0
Chicago Great Western	1939	2,480	2,842	5,322	2.0	32,210	1,751	610	21.6	910	68.1	3,296	121	97.1
	1938	2,692	2,435	5,127	3.3	30,857	1,748	620	21.7	815	61.2	2,952	124	86.4
Chi., Milw., St. P. & Pac.	1939	45,435	15,123	60,558	2.7	29,236	1,764	699	25.2	434	27.6	2,393	115	66.7
	1938	48,467	14,210	62,677	2.5	28,041	1,677	648	24.5	362	23.9	2,047	113	59.1
Chi., St. P., Minneap. & Om.	1939	3,950	5,462	9,412	8.9	19,536	1,443	559	24.0	403	25.8	2,228	100	55.3
	1938	4,282	5,202	9,484	9.9	18,554	1,337	561	25.3	369	21.7	2,097	107	51.2
Great Northern	1939	37,073	8,698	45,771	8.7	36,349	2,424	1,041	30.1	551	30.4	3,162	102	50.5
	1938	37,459	7,394	44,853	9.0	30,186	1,961	834	26.5	353	19.4	2,018	119	39.5
Minneap., St. P. & S. St. M.	1939	12,946	3,326	16,272	7.0	22,627	1,344	535	23.7	391	25.7	1,479	97	83.3
	1938	13,269	2,417	15,686	7.8	19,494	1,132	435	22.4	300	20.5	1,113	102	72.7
Northern Pacific	1939	30,716	4,899	35,615	11.7	33,013	2,092	881	26.6	520	30.2	2,895	133	57.4
	1938	32,060	3,823	35,883	11.9	30,748	1,888	762	24.2	371	22.8	2,096	144	46.5
Central Western Region:														
Alton	1939	1,761	5,785	7,546	12.8	35,187	1,458	537	24.1	430	29.5	3,562	122	76.7
	1938	2,570	5,794	8,364	13.5	33,278	1,350	445	21.8	324	26.0	2,896	125	65.3
Atch., Top. & S. Fe (incl. G. C. & S. F. & P. & S. F.)	1939	77,222	12,000	89,222	11.4	35,339	1,791	586	20.8	365	28.3	2,370	114	72.7
	1938	79,467	12,766	92,233	11.4	34,089	1,752	556	20.1	324	26.2	2,178	116	68.4
Chicago, Burl. & Quincy	1939	30,209	12,947	43,156	8.3	31,387	1,740	671	23.6	531	35.3	2,547	109	67.0
	1938	30,470	12,983	43,453	9.6	29,694	1,655	622	23.0	455	31.6	2,182	115	63.0
Chi., Rock I. & Pac. (incl. Chi., Rock I. & Gulf)	1939	21,313	11,104	32,417	6.5	27,778	1,485	522	22.4	563	42.8	2,273	118	64.7
	1938	25,096	12,807	37,903	6.7	27,034	1,453	510	22.5	496	37.6	2,218	126	61.1
Denver & Rio Gr. Western	1939	12,583	2,802	15,385	3.3	29,553	1,774	701	24.5	373	23.0	2,222	152	53.3
	1938	13,003	2,760	15,763	4.2	28,416	1,717	681	24.6	325	20.2	1,974	154	48.0
Southern Pac.—Pac. Lines	1939	31,732	24,199	55,931	6.1	38,051	2,233	732	21.5	590	45.3	3,853	97	75.5
	1938	35,350	26,665	62,015	6.0	35,656	2,133	695	20.8	469	36.8	3,405	101	70.9
Union Pacific	1939	39,300	16,784	56,084	16.0	42,225	1,909	673	21.2	649	46.2	3,790	119	72.9
	1938	43,661	13,034	56,695	12.8	43,454	1,999	703	21.0	580	41.9	3,355	113	61.1
Southwestern Region:														
Mo.-Kansas-Texas Lines	1939	6,055	2,576	8,631	4.4	31,448	1,553	514	21.2	702	58.5	1,857	86	63.6
	1938	6,270	3,422	9,692	3.8	30,570	1,586	556	22.2	660	50.3	1,893	85	59.4
Missouri Pacific	1939	18,573	15,067	33,640	3.1	34,107	1,862	673	23.0	664	46.9	3,116	110	70.7
	1938	19,952	13,950	33,902	2.2	33,919	1,846	670	23.4	650	46.0	3,037	109	66.2
St. Louis-San Francisco	1939	18,589	4,533	23,122	4.6	26,232	1,301	504	24.8	505	33.8	2,430	119	66.7
	1938	20,183	3,482	23,665	6.4	25,534	1,299	489	24.3	425	29.7	2,130	124	58.9
St. Louis Southw. Lines	1939	2,631	2,915	5,546	2.5	34,872	1,736	578	20.9	891	73.5	2,853	85	74.0
	1938	2,764	3,571	6,335	2.6	33,286	1,728	558	20.1	802	68.7	2,848	86	74.7
Texas & New Orleans	1939	7,061	10,717	17,778	4.7	28,119	1,491	538	22.8	527	36.9	2,141	85	70.0
	1938	7,471	10,317	17,788	4.3	28,048	1,497	532	22.0	496	35.6	2,035	86	64.0
Texas & Pacific	1939	3,767	3,819	7,586	1.8	36,156	1,862	618	21.5	696	55.2	2,701	83	49.8
	1938	3,827	3,894	7,721	2.0	33,714	1,853	601	20.9	655	53.0	2,677	85	50.6

News continues on second left-hand page

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Railway Officers

(*Continued from page 269*)

vada, Mo., to succeed **J. M. Kelly,** who has been appointed trainmaster, all districts, of the Wichita division, with headquarters at Wichita, Kan. Mr. Weeks is succeeded by **F. T. Mahoney,** superintendent of the Eastern and Kansas City Terminal divisions, with headquarters at Kansas City, Mo., who, in turn, has been succeeded by **C. F. Dougherty,** superintendent of the Missouri and Memphis divisions and the Missouri Illinois west of the Mississippi river, with headquarters at Poplar Bluff, Mo., who, in turn, has been succeeded by **C. W. Page,** assistant superintendent of the Omaha-Northern Kansas divisions with headquarters at Atchison, Kan. Mr. Page has been succeeded by **C. H. Dunaway,** trainmaster of the Monroe, Ferriday and Hamburg districts, with headquarters at Monroe, La., who, in turn, has been replaced by **G. W. Griffing,** trainmaster of all districts of the Louisiana and Little Rock divisions with headquarters at Monroe, La. Mr. Griffing has been succeeded by **R. H. Gragg,** trainmaster of all districts of the Wichita division, with headquarters at Wichita, Kan., and the latter has been succeeded by **J. M. Kelly.**

TRAFFIC

Orrie M. Meyne, who has been promoted to assistant freight traffic manager of the Erie, with headquarters at Cleveland, as reported in the *Railway Age* of July 29, was born in Santa Fe, Argentine Republic, South America on April 28, 1893, and was educated in the public schools at Paterson, N. J. He entered railway service on June 1, 1910 with the Erie, and served as a clerk and telegrapher at Montclair, N. J., until December, 1913, when he was transferred to the traffic department. He served as a stenographer and clerk in the division freight office at New York from December, 1913 to December 1, 1916, and was employed in various clerical positions including that of managing clerk of the tariff bureau at New York until September 30, 1925. On the latter date he was promoted to chief of the tariff bureau, and on June 1, 1927, to assistant general freight agent, which position he held until April 1, 1932, when he was promoted to general freight agent, with headquarters at Cleveland.

Orrie M. Meyne

James W. Hill, whose appointment as general traffic manager of the Denver & Rio Grande Western, with headquarters at Denver, Colo., was announced in the *Railway Age* of July 29, was born at Orient, Ia., on January 22, 1895, and entered railway service in May, 1910, as a station clerk on the Chicago, Rock Island & Pacific at Moline, Ill. During the next seven years Mr. Hill served in this position and as telegraph operator and agent at various points. He then enlisted in the signal corps of the U. S. Army and remained in the service until July 1, 1919. After his discharge from the army he returned to the Rock Island as agent at the shops at Silvis, Ill., being transferred to the Eighty-third Street freight house at Chicago on October 1, 1919. In April, 1920, Mr. Hill was sent to Detroit, Mich., as traveling freight agent, being advanced to assistant general agent at that point in the following month and on July 1, 1923, he was promoted to general agent at Detroit. He was advanced to general freight agent, with headquarters at Chicago on June 1, 1936, and on February 1, 1937, he was further advanced to assistant freight traffic manager on the Rock Island at Chicago, the position he held at the time of his recent appointment as general traffic manager of the D. & R. G. W.

James W. Hill

ENGINEERING AND SIGNALING

C. H. Fox, engineer of water service of the Canadian Pacific, with headquarters at Winnipeg, Man., has been appointed district engineer of the Saskatchewan district, with headquarters at Moose Jaw, Sask., to succeed **J. V. McNab,** who has been granted an extended leave of absence because of illness. **C. K. Holden,** roadmaster on the Nelson division, with headquarters at Grand Forks, B. C., succeeds Mr. Fox as engineer of water service at Winnipeg. **H. H. Tripp,** division engineer at Edmonton, Alta., has been transferred in the same capacity to Fort William, Ont., succeeding **K. A. Dunphy,** who has been transferred to the Portage division at Winnipeg. **V. H. Carruthers,** division engineer of the Portage division, has been transferred to Edmonton, succeeding Mr. Tripp.

William F. Price, who has been appointed signal engineer of the Gulf, Colorado & Santa Fe to succeed **E. P. Hanson,** retired, as reported in the *Railway Age* of July 22, was born at Beloit, Kan., on July 10, 1888. He attended high school in Topeka, Kan., and graduated from the University of Kansas in June, 1913. While attending high school and college, he worked, between school sessions, in the auditing department, in the Topeka shops, and in the signal department of the Atchison, Topeka & Santa Fe. His first work was with a repair gang on the New Mexico division; following this he worked as a construction wireman and maintainer. Following graduation from college, Mr. Price started his continuous service with the Santa Fe as a draftsman in the office of the signal engineer, Eastern Lines, in June, 1913. Subsequently he served as chief draftsman in the system signal engineer's office and in 1920, he was appointed assistant signal engineer of the Coast Lines.

William F. Price

Mr. Hanson was born at Florence, Kan., on April 8, 1878, and entered railway service for the Santa Fe on March 1, 1897, in the track department, serving as assistant foreman and extra-gang foreman until July 1, 1899, when he was transferred to the signal department as gang foreman and inspector. On May 1, 1903, he was appointed general signal foreman of the Gulf, Colorado & Santa Fe, and on March 1, 1905, was appointed signal supervisor, serving in this capacity until October 1, 1918. Under Federal operation of the railroads, Mr. Hanson served as signal engineer of the Southwestern Regional District, with jurisdiction over 18 railroads, until November 1, 1920, when he was appointed signal engineer of the Gulf, Colorado & Santa Fe.

OBITUARY

Allan P. Mackinnon, general counsel for the Boston & Maine, with headquarters at Boston, Mass., died on August 7 at his home in Winchester, Mass., at the age of 59.